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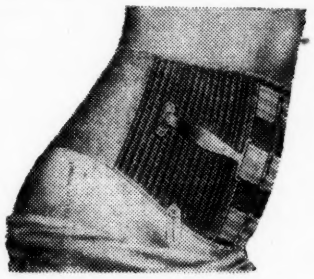

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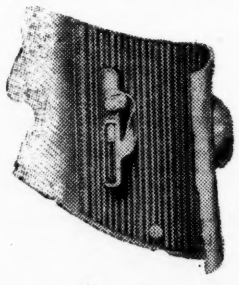

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THE PATHOGENESIS OF DEFICIENCY DISEASE.*

[WITH SPECIAL PLATE.]

BY

ROBERT McCARRISON, M.D., D.Sc., F.R.C.P.,

BREVET LIEUTENANT-COLONEL, I.M.S.

(From the Pasteur Institute of Southern India, Coonoor.)

(*Abstract.*)

IN perusing the literature of disease due to deficiency of certain accessory food factors one cannot fail to be struck by the fact that however complete our observations have been in some directions there are others in which inquiry has been almost wholly neglected. The want of substances essential for the normal metabolism of the human or animal body suggests the need for examining the effects of their deficiency on the organs responsible for digestion and assimilation and for the regulation of metabolic processes. Yet our knowledge of these effects is very scanty. The influence of "vitaminic" deficiency on the adrenal glands, on the pancreas, on the liver and the spleen, is, so far as I can ascertain from available literature, unknown; while that on the thyroid apparatus has been but incompletely studied. Nor are we better informed with respect to other important structures of the body, as, for example, the pituitary gland and the reproductive organs. It has seemed to me desirable, therefore, to attempt to fill some of these gaps in our knowledge.

The morbid anatomical findings which I have to record will, I hope, aid in a clearer comprehension of the genesis of diseases resulting from deficiency of certain accessory food factors — not only as regards their grosser evidences, as exemplified by beri-beri, but also as regards their minor manifestations. It is rare that the practising physician, outside the tropics, meets with morbid states resulting from complete deprivation of accessory food factors. My own clinical experience leads me to believe that many are the minor maladies associated with the incomplete provision of these substances in the food of children especially, or with their incomplete assimilation. Be this as it may, the laboratory experience gained in the prosecution of this research has afforded me no small measure of assistance in dealing with cases of "bilious vomiting," acidosis, mucous disease, and other metabolic disorders of childhood which have of late been referred to me. I desire, therefore, to draw the attention of physicians, especially those connected with the great children's hospitals, to the effects of "vitaminic" deficiency not only on the central nervous system, but also on the liver, the pancreas, the spleen, the pituitary, the thymus, the thyroid, the reproductive organs, and the adrenal sympathetic system; the functional perfection of all being of such vital importance to the growing child.

In considering these problems in the laboratory it is necessary to observe the results of "vitaminic" deficiency in healthy animals and also to consider them in connexion with other pathogenic factors which may operate in nature. For example, both inanition and a diet too rich in starch and too poor in "vitamines" lead to depression of biliary, pancreatic, and gastro-intestinal function. If these organs are exposed in addition to the influence of toxic or bacterial agencies, their depression will be manifestly greater. The purity of laboratory experimentation is rarely repeated in nature. The manifold toxic influences to which human beings are subjected under conditions of food deficiency must play an important part in further depressing the functional activity of these organs and tissues on which normal metabolism is dependent. The toxic products of intestinal bacteria or intestinal parasites may thus assume a rôle of high importance in the genesis of morbid states which are, no doubt, initiated by the dietetic defect.

During the year 1914, and during 1918, I fed a large number of pigeons on a diet consisting solely of polished rice—that is to say, on a diet composed mainly of starch, with less than 10 per cent. of protein, and with complete absence of accessory food factors; 168 of these birds developed polyneuritis avium within the period of the experiments. The heart's blood and the internal organs of 142 birds so fed were examined bacteriologically at autopsy; of these, 94 were found to have had concurrent septicaemic infections of various kinds, while the heart's blood and organs of 48 were sterile. Four out of 142 had tuberculous disease of the lungs or abdominal viscera, or both.

Seventy-two pigeons were employed as controls; the blood and internal organs of 63 were examined bacteriologically at the time of death. Six were found to have septicaemic infections of various kinds; two had tuberculous peritonitis. The incidence of tuberculous disease in the pigeons employed was thus 2.7 per cent. The organs of a large number of these birds were weighed immediately after death.

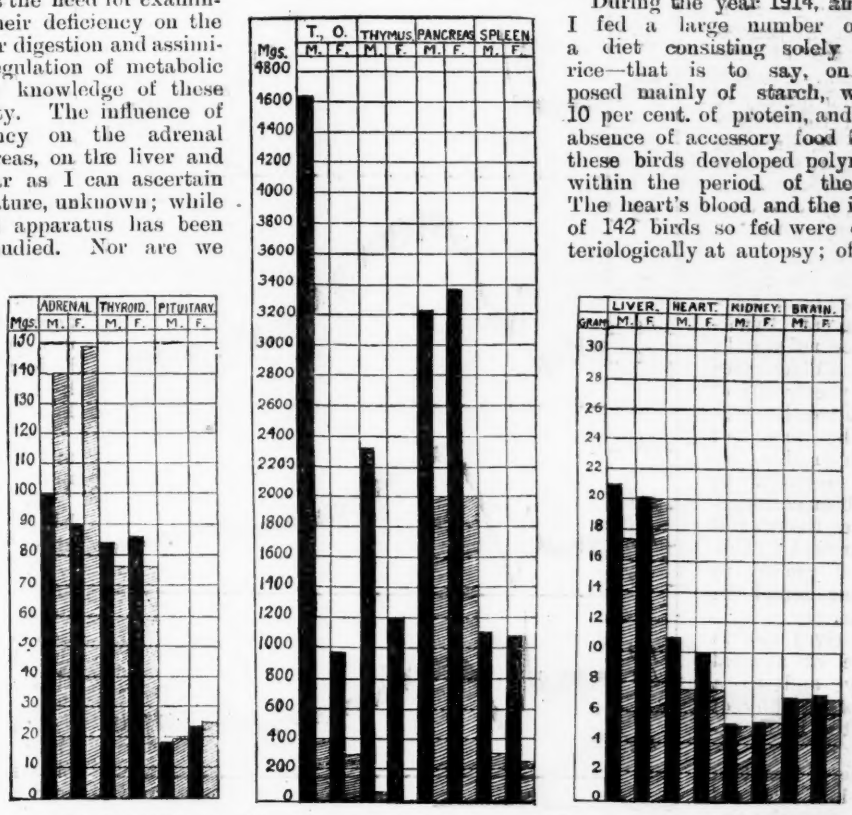


Chart showing weights of organs, per ki'o of body weight, from control pigeons (35 in number) and from pigeons suffering from avian beri-beri (34 in number). Organs sterile. Note the great hypertrophy of the adrenal glands and the great atrophy of the thymus, the reproductive glands, the spleen, and the pancreas in diseased birds. Weights of organs calculated against body weight of birds at the time the vitamine free diet was commenced. Black columns = control pigeons; shaded columns = diseased pigeons; T = testicle; O = ovary.

CONCLUSIONS.

The following conclusions have been reached as a result of clinical, morbid anatomical, histological, and bacteriological observations. For details of the research the full paper, which will be published in the *Indian Journal of Medical Research*, should be consulted.

1. The absence of certain accessory food factors from the dietary—improperly termed "anti-neuritic"*—leads not only to functional and degenerative changes in the central nervous system, but to similar changes in every organ and tissue of the body. The morbid state to which their absence gives rise is not a neuritis.

2. The symptom-complex resulting from the absence of these substances is due (*a*) to chronic inanition; (*b*) to

* The original paper of which this is an abstract contains full experimental, clinical, and morbid anatomical details. It will appear in an early number of the *Indian Journal of Medical Research*

* The commonly accepted terminology applied to those accessory food factors the lack of which is the essential cause of beri-beri has been retained in this paper, but there are objections to the term "anti-neuritic vitamines." This matter of terminology is dealt with in the full paper.

derangement of function of the organs of digestion and assimilation; (*c*) to disordered endocrine function; (*d*) to malnutrition of the nervous system, and (*e*) to hyperadrenalinaemia.

3. Certain organs undergo hypertrophy; others atrophy (Figs. 1 and 2). Those which hypertrophy are the adrenals. Those which atrophy, and in the order of severity named, are the thymus, the testicles, the spleen, the ovary, the pancreas, the heart, the liver, the kidneys, the stomach, the thyroid, and the brain (see chart). The pituitary gland showed in adult birds a slight tendency to enlargement in males only.

4. The enlargement of the adrenals is a true hypertrophy in so far as it is associated with a proportionate increase of the glands' adrenalin content. The quantity and quality of adrenalin in the hypertrophied organ is, area for area, approximately the same as that found in the adrenals in health. The hypertrophy is equally well marked in both sexes.

5. Oedema has invariably (100 per cent.) been associated with great hypertrophy of the adrenal glands, while 85 per cent. of all cases having great hypertrophy of these organs had oedema in some form. The amount of adrenalin, as determined by physiological methods, in such cases has been considerably in excess of that found in cases not presenting this symptom, and greatly in excess of that found in normal adrenals.

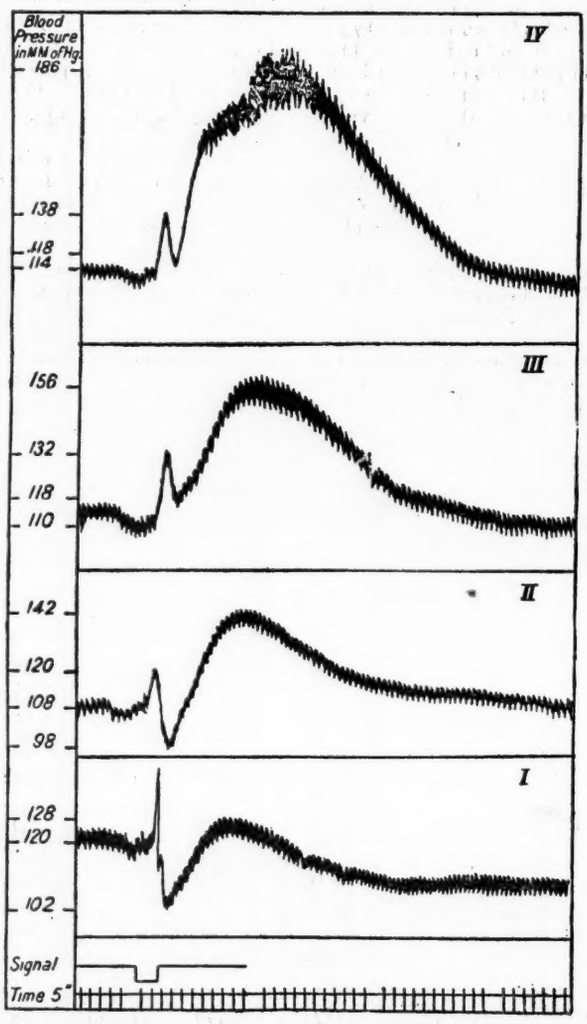
6. Inanition gives rise to a similar state of adrenal hypertrophy, and to a similar state of atrophy of other organs, the brain excepted.

7. The oedema of inanition and of beri-beri is believed to be initiated by the increased intracapillary pressure which results from the increased production of adrenalin, acting in association with malnutrition of the tissues. Failure of the circulation and venous stasis may subsequently contribute to it. Age is an important factor determining its occurrence. This finding is held to account in great measure for the occurrence of "war oedema" amongst prisoners of war in Germany.

8. Wet beri-beri and dry beri-beri are essentially the same disease; the former differs from the latter in the greater derangement of the adrenal glands.

9. Gastric, intestinal, biliary and pancreatic insufficiency are important consequences of a dietary too rich in starch and too poor in "vitamines" and other essential constituents of the food. It is suggested that some of the obscure metabolic disorders of childhood might be examined from this viewpoint as well as from that of endocrine gland starvation.

10. A state of acidosis results from the absence of so-called "anti-neuritic vitamines"; this state is due to the imperfect metabolism of carbohydrates and to acid fermentation of starches in the intestinal tract. Clinically, it is evidenced by progressive slowing and deepening of the respirations.



Kymographic tracings of arterial blood pressure in sheep weighing 35 lb. I. Injection into jugular of an emulsion of both adrenals, weighing 16 mg., from a healthy pigeon. II. Injection into jugular of $\frac{1}{10}$ mg. of adrenalin (commercial solution 1 in 1,000). III. Injection into jugular of an emulsion of both adrenals, weighing 28 mg., from a pigeon which died of inanition. IV. Injection into jugular of an emulsion of both adrenals, weighing 72 mg., from a pigeon which died of beri-beri with pronounced oedema.

11. Great atrophy of muscular tissue results from deficiency of accessory food factors; it is due in part to the disturbance of carbohydrate metabolism in consequence of disordered endocrine function, in part to the action of the adrenals in supplying blood to the vegetative organs of the body at the expense of the muscles.

12. Profound atrophy of the reproductive organs is an important consequence of "vitaminic" deficiency. It leads to the cessation of the function of spermatogenesis (Figs. 3 and 4). In the human subject such degrees of atrophy would result in sterility in males and in amenorrhoea and sterility in females. This finding is held to account in great measure for the occurrence of "war amenorrhoea."

13. The central nervous system atrophies little: paralytic symptoms, when they occur, are due mainly to impaired functional activity of nerve cells; much more rarely to their degeneration.

14. It is thought that, because of their atrophy out of all proportion to other tissues, the thymus, the testicles, the ovary, and the spleen provide a reserve of accessory food factors for use on occasions of metabolic stress. This reserve, however, is rapidly exhausted.

15. The bones are thinned, and there is a loss of bone marrow.

16. The red cells of the blood are diminished by about 20 per cent.

17. The whole morbid process is believed to be the result of nuclear starvation of all tissue cells. Even the adrenals, which alone of all organs of the body undergo enlargement, show on section changes in some of their cells indicative of nuclear starvation. Accessory food factors are nuclear nourishers.

18. Finally, although deficiency of certain accessory food factors is the essential etiological agent in the genesis of beri-beri, it is held that infectious and parasitic agencies are often important causes determining the onset of symptoms.

"Vitaminic" deficiency renders the body very liable to be overrun by the rank growth of bacteria.

Colonel A. W. Sheen, A.M.S.(T.F.), of Cardiff, at present consulting surgeon, War Hospital, Southern Command, India, recently contributed to the *Indian Medical Gazette* a paper on the principles of military orthopaedics and on the constitution of an orthopaedic hospital. He advised that such a hospital should be placed in a bracing locality, easily accessible by railway, and that, in addition to the ordinary hospital departments, it should have electro-therapeutic, hypnotic, massage, and mechano-therapeutic departments, measuring room, bath and *x*-ray rooms, an operation room, a splint and appliance department, and workshops where the men can do real work and at the same time overcome disabilities. Cases should be grouped in wards according to their nature. In conclusion, he laid it down that early diagnosis and early continuous treatment in large specially staffed and completely equipped hospitals are essential. The motto of such a hospital should be "patience and perseverance."

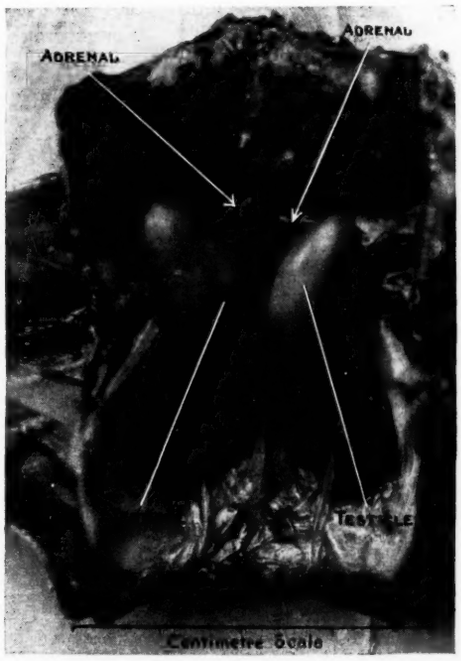


FIG. 1.—Adrenals and testicles from a healthy adult pigeon. Upper poles of testicles slightly everted to show the underlying adrenals. Average weight of adrenals per kilo of body weight in adult male pigeons 100.3 mg.; average weight of testicles in ditto per kilo 4.543 grams.

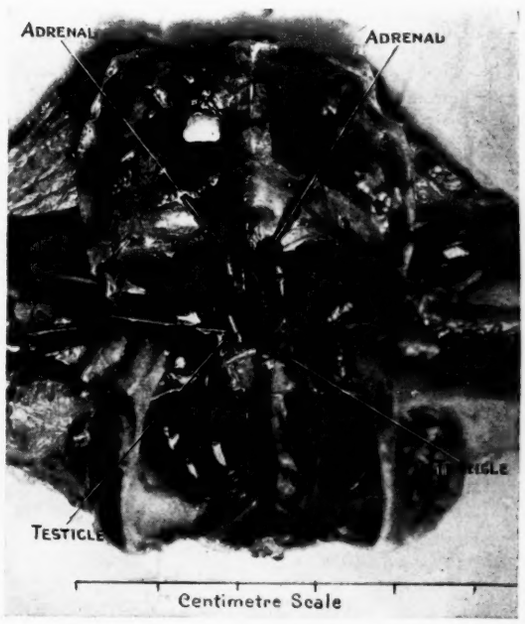


FIG. 2.—Showing effect of a vitamine-free diet on the adrenals and testicles. From a case of avian beri-beri in pigeon. Note the great hypertrophy of the adrenals and the enormous atrophy of the testicles. Average weight of adrenals per kilo of body weight in male pigeons which have died of beri-beri 139.5 mg.; average weight of testicles in ditto 0.4015 gram.

FIG. 3.—Section of normal testicle of pigeon. × 95.

FIG. 4.—Section of pigeon's testicle (× 95), showing effect of a diet deficient in "antineuritic vitamines." Note great contraction of tubules, thickening of intertubular tissue, and almost complete absence of sperm elements.

FIG. 1.—Full term central placenta praevia. The dark shading denotes the increased area and distribution of the placenta. (Reduced.)

FIGS. 4 and 5.—LOW lateral and overlapping placenta praevia. Fig. 4 shows the lower third of the placenta, thickened and indurated by thrombosis. (Reduced.)

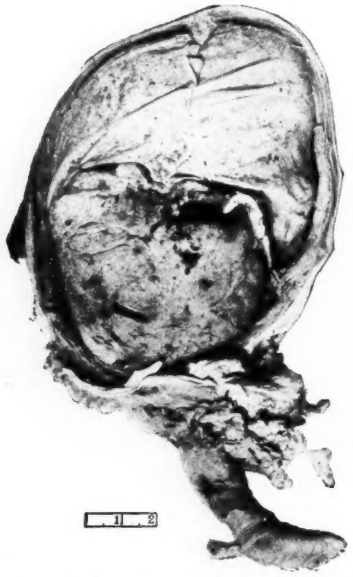


FIG. 2.—Central placenta praevia at full term. The uterus laid open to display placenta and fetus after version. (Reduced.)

FIG. 6.—Showing a tongue-shaped clot continuous with the placental margin. From a case of lateral placenta praevia. (Reduced.)

FIG. 3.—Dead fetus; death due to placental obstruction and placental damage incurred during labour. (Reduced.)

FIG. 7.—Large, flattened out encephalo-meningocele. (Reduced.)

PLACENTA PRAEVIA.

[WITH SPECIAL PLATE.]

BY

H. BRIGGS, M.B., F.R.C.S.ENG.,

PROFESSOR OF OBSTETRICS AND GYNAECOLOGY IN THE UNIVERSITY OF LIVERPOOL.

A LITERARY expert whose brilliant work is justly revered writes: "Every book that can be called a book has had one interested and excited reader." Unsympathetic isolation has not been the fate of textbooks on midwifery; on the whole, they have been welcome and reliable guides to numerous readers, and highly creditable to their authors.

Exception cannot be taken to their chapters on *ante-partum* haemorrhage. The verbosity of the older writers on placenta praevia recalls the literary clothing of the political wisdom of Burke.

Placenta praevia, notwithstanding the complete literature and the increasingly successful treatment of its haemorrhage, still continues to repeat its chilling spectacle of an avoidable stillbirth.

A group of specimens illustrating various types of these avoidable stillbirths is available in the obstetrical museum of the University of Liverpool. The corresponding clinical situation appeals for amendment, which must be reached by earlier concentration and co-operation concerning three important particulars: (1) The *ante-partum* haemorrhage; (2) the viability of the fetus; and (3) the bulk and area of the placenta within the obstruction zone.

Collectively, the three are pertinent to pregnancy and labour when the placenta praevia is central, that is, complete, or almost central, that is, low lateral and overlapping, at, or after, the thirty-sixth week of gestation.

Singly, the *ante-partum* haemorrhage demands the maximum of attention. This it has received by a liberal sacrifice of the fetus as a maternal plug.

A fetus alive and situate mostly above the obstruction of a thickened and damaged placenta possesses faint prospects of survival. Only a speedy and safe birth-route can supply the whole of the requirements of labour in the graver degrees of placenta praevia in advanced pregnancy.

Let me give two examples:

CASE I.—*Caesarean Section for Central Placenta Praevia. (37½ week.)*

On September 1st, 1918, Dr. Moss, of West Kirby, called upon me with the information that he believed a central placenta praevia in one of his patients, a 6-para aged 40, had led to two smart haemorrhages—lasting two days and one day with a week's interval—at the thirty-fifth and thirty-sixth week of gestation. Clearly the Maternity Hospital was urgently the place for the patient, and September 10th was mentioned for the operation, provided bleeding did not return in the interval.

Bleeding did return on September 6th, exactly at the 37½ week of gestation. At 7 a.m. the trickle of blood was noticed, and at 10.15 a.m. its volume was increasing; there were no clots. Caesarean section was performed at noon, and a child, 6 lb. 3 oz., was extracted alive. The uterine attachments of the placenta were four-fifths to the left and one-fifth to the right of the cervix, mainly along the anterior wall of the uterus. The placenta weighed 12½ oz.; it had partly underlain the uterine incision, as shown by the notch, measuring 1½ inches, inflicted in its upper border. The patient convalesced normally. She and her breast-fed infant left the hospital in good health seventeen days after the Caesarean section.

In this case Dr. Moss concentrated his attention on the early complete diagnosis from the smart haemorrhages and the detection of the living fetus, in the first vertex position, and of the placenta around the cervix in the lower zone of the uterus on vaginal and abdominal palpation. Confirmation of Dr. Moss's diagnosis was acknowledged in hospital by all of us in our efforts, amid favourable resources for operation, to respond rightly and fully to the opportunity.

CASE II.—*Caesarean Section for a Low Lateral Placenta Praevia. (Full Term.)*

A primigravida, aged 39; in labour. The fetus, in the first vertex position, above the brim of a flat pelvis, was out of reach on ordinary internal examination. There had been an initial smart haemorrhage. Caesarean section, performed on March 1st, 1917, conferred safety on the mother and preserved the life of the male child, 7 lb. 1½ oz. in weight. The prompt transference of the patient to the Maternity Hospital after an early diagnosis of a low lateral placenta praevia was due to the care and foresight of Dr. McIntyre Brown of West Kirby.

Soon after the patient was discharged from hospital her convalescence was delayed by mild post-operative phlebitis.

The bright clinical aspects, just presented, encouraged early concerted efforts. The cheerless contrasts—as silent object lessons—loom in the Obstetrical Museum.

Full Term Central Placenta Praevia.

In 1914, in the ambulance on its way to the Liverpool Maternity Hospital, a woman died of haemorrhage at the full term of gestation. A central placenta praevia, an exceptionally well-grown male fetus of large size in the first vertex position, a cervix not dilated, and an inappreciable separation of the placenta, betrayed a group of physical conditions for clinical discernment. The dark shading in the photograph (Fig. 1) denotes the increased area and the distribution of the placenta.

Clinical recognition of the placenta praevia on palpation in the vaginal fornices around the undilated cervix is more than a mere project towards the advancement of obstetrical resource. The whole specimen appeals to the eye, awakens clinical effort, and pleads for Caesarean section.

Unfortunately its clinical history remains a blank after oft-repeated inquiries by many persons in various directions. There may or may not have been reasonable opportunities for observation, advice, or action; the absence of any preliminary warning by an *ante-partum* haemorrhage was not proved; as a very rare coincidence this may be admitted as possible.

By ante-natal officers and by practising obstetricians the anatomical evidence will be appreciated, especially in its practical interpretations. The warning haemorrhage, the guidance through the subsequent interval and its hazards preceding operation, and the facilities for Caesarean section, are a formidable total. These essential considerations emphasize the need for an earnest grasp of the significance of the *ante-partum* haemorrhage. Otherwise, even version may be too late.

Central Placenta Praevia at Full Term.

In the case from which this specimen (Fig. 2) was taken there were a sharp warning haemorrhage of short duration in the course of the night of March 10th, 1913, and a recurrence of haemorrhage with the commencement of labour a week later, at 2 a.m. on March 18th. There was increasing collapse during the twelve and a half hours' delay in sending for the doctor and in the admission of the patient to hospital.

After admission at 2.30 p.m. the profound collapse was treated by intravenous and subcutaneous salines and pituitrin. At that time the bleeding had ceased, but as a precaution against further haemorrhage, after the dislodgement of clots, podalic version was performed and a leg was brought through the digitally perforated placenta; the membranes were beyond reach.

There was no further bleeding; at 6.45 p.m., four and a quarter hours later, the maternal shock ended fatally. The patient was a married woman, aged 30, who had had four previous normal labours.

Fig. 2 represents the uterus laid open to display the placenta and fetus after version.

To look back at the whole of the facts of this full-term labour is to realize the room for amending efforts, more particularly against delay; also clearly, if a diagnosis was made, it was not acted upon prior to the admission of the patient into hospital. At this stage of the inquiry judgement may be balanced.

These two specimens (Figs. 1 and 2) have demonstrated the dual fatality—to mother and fetus—attributable to haemorrhage. The specimens about to be described (Figs. 3, 4, and 5) will reveal the single fatality—to the fetus—that placental obstruction and placental damage incurred during labour may cause.

The specimen shown in Fig. 3 will convince any who may still need to be convinced that, when a considerable delay and a moderate haemorrhage in the first stage have manifested their risks, version is more defensible than Caesarean section, especially for a woman aged 37 already the mother of seven children, all living. With a less numerous family a prospective stillbirth in such a formidable setting digs more deeply and excites inquiry. If the specimen and its clinical history are considered together, the preventable stillbirth awakens practical sympathy.

Central Placenta Praevia (Thirty-fifth Week).

The estimated full term was due early in July, 1913. There were reports of two sharp haemorrhages, one of short duration on May 1st and the second at 10.30 p.m. on June 1st, treated by a vaginal pack until 9 a.m. on June 2nd, when blood reappeared at the vulva through the saturated pack.

The patient arrived in hospital at 5 p.m. on June 2nd. Then were reported: Two-fingers' dilatation of the cervix, a vertex presentation, and complete placenta praevia. The management consisted in digital perforation of the placenta, internal

version, and the lodgement of the half-breech of the fetus within the placental girdle (Fig. 3). At 7.15 p.m., two hours after version, the stillborn female child came through the placenta. The fetus and placenta together weighed 6 lb. 13 oz. The patient recovered. The total loss of blood had not been severe.

The prominent incidents of the labour were, first, the delay early in the first stage due to the bulk and area of the placenta within the obstruction zone; and, secondly, the abolition later of obstruction. During the second stage the freely perforated and damaged placenta as a girdle above the pelvic brim permitted the expulsion of the fetus.

The fetal sacrifice involved in this effective method of providing for maternal safety cannot be avoided by the alternative of cervical dilatation by the Champetier de Ribes bag. Cervical dilatation does not abolish placental obstruction and placental damage; these are potent causes of stillbirth, and their effects become vividly apparent in the specimen illustrated in Figs. 4 and 5, which establish the reality and gravity of placental obstruction and placental damage.

Low Lateral and Overlapping Placenta Praevia (Thirty-fifth Week).

A 4-para, aged 29, was admitted into the Maternity Hospital on January 2nd, 1916, at 10.30 a.m., with slight haemorrhage, which gradually increased. At 4.30 p.m. a Champetier de Ribes's bag was inserted after perforation of the membranes; when the bag was placed the separated lower third of the placenta was discovered, thickened and indurated by thrombosis (Fig. 4); it hung down, over and below the promontory in the sacral hollow, diminishing the available conjugate; the head of the fetus remained loose above the brim.

At 5.15 p.m. the cervix was fully dilated; the Champetier de Ribes bag was removed; the head was still lying loose above the brim. Bipolar version was preferable to forceps. Fetal heart then heard, 130. The thick placental mass was clearly an intra-pelvic obstruction, 1¼ in. to 1 in. in thickness. At 8.20 p.m. the dead-born male fetus (5 lb. 11 oz.) was spontaneously expelled; also the placenta, 1 lb. 5½ oz. The mother recovered.

Placental obstruction to labour is incontestable. Damage to the placenta occurs.

In the presence of placental obstruction the rupture of the membranes is itself an incomplete step in treatment, to be followed by a usually slow labour and a stillbirth. The latter, as the rule, is even to be expected when the more favourable vertex presentation has been maintained and perhaps an accelerated forceps extraction adopted.

Variations in the bulk and area of the praevial placenta and in the extent of the damage to it are compatible with variations in their effects on the destruction or preservation of fetal life during labour. Major and minor degrees of variation are clinically accessible. Intermediate degrees are likely to introduce confusion.

So far the inquiry has dealt with a viable fetus at the onset of labour. In cases of placenta praevia in which intrauterine death has preceded the onset of labour prolapse of the placenta exerts an insignificant bearing on the conduct and result of the labour.

Two examples may now briefly be alluded to as illustrations of harmless placental obstruction.

Placenta Praevia with Prolapse of the Placenta. (Two Cases.)

Case 1.—In this case the larger part of the placenta was found early in the vagina; the smaller portion still attached anteriorly within the uterus.

Bleeding and labour pains were noted at 10 a.m. on March 29th, 1911; next day the patient was admitted to hospital at 11 a.m. The loss of blood was then free and there was shoulder presentation, right dorso-anterior; internal podalic version was effected. The spontaneous expulsion of the placenta preceded the assisted delivery of the macerated male fetus, which weighed 6 lb. 6 oz.

The patient, aged 30, had had five children and one abortion. The menses had been suppressed since the end of July, 1910.

Case 2.—A multipara, aged 32, with a record of eight previous normal labours, stated that the last menstruation ceased on October 10th, 1914, and that on May 3rd, at twenty-nine and a half weeks, labour pains and bleeding commenced simultaneously at 12.30 p.m. The membranes ruptured at 2.30 p.m.; the haemorrhage gradually lessened, and at 4.45 p.m. it had practically ceased. At 6 p.m. there was almost full dilatation, and the placenta was in the vagina appearing at the vulva. At 6.20 p.m. the fetus was expelled in the membranes; its apparent age was six and a half months. There was not at any time an excessive blood loss. The rupture of the membranes is situated a little more than one inch from the margin of the placenta.

Occasional Difficulties in Diagnosis.

Fig. 6 shows an organized tongue-shaped clot continuous with the placental margin from a case of lateral placenta praevia. The fetus after version was expelled alive and survived. The value of the specimen lies in the connexions and the firmness of the clot, indistinguishable from the thrombosed placenta until the microscope had been used.

Large, Flattened out Encephalo-meningocele.

In this case the condition simulated prolapse of the placenta, and was rare in its extent and conformation. (Fig. 7.)

SUMMARY.

1. The initial haemorrhage is a warning to be taken seriously. Equipment is required, also prompt transference of the patient into a hospital or a nursing home. To quote a current war expression: it is not one man's or one woman's business to stand by whilst delay adds its dangers.

2. The viability of the fetus at or after the thirty-sixth week of gestation is acceptable; induction of premature labour has practically proved this; Caesarean section is unlikely to disprove it.

3. The bulk and area of placenta praevia in the obstruction zone can be approximately estimated by examination. This obstruction may be an important item in directing the management of the labour.

If early opportunities and complete equipments are obtainable, the three particulars I have mentioned are more consistent with maternal and fetal safety by Caesarean section than by any other method of treatment of placenta praevia. Debatable matters have developed amid the large number of Caesarean sections already published. The defects and hazards of the earlier operations have been recognized. Opposition will wane with better selection.

The present obstetrical attitude lacks neither prejudice nor proof. Caution is cherished by the lapses in opportunities and the gaps in equipments yet to be banished by an ever-increasing co-operation.

My thanks are tendered to colleagues and others of my professional friends for their gifts to the teaching equipment of my department. Dr. Hendry, the museum subcurator, has superintended the preservation of the specimens, and Mr. J. Tenbosch, the laboratory assistant, has taken the photographs. Their efficient services are much appreciated.

THE PREVENTION OF POSTERIOR BOWING IN COMPOUND FRACTURE OF THE FEMUR.

BY

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THOSE who have had considerable experience during the present war of gunshot wounds associated with compound fracture of the femur assert that the most difficult deformity to avoid is posterior bowing.

This is especially the case when there is a suppurating posterior wound which needs frequent dressings. Most are agreed that the best appliance for such cases is the Thomas bed knee splint with extension; in this the thigh is supported with strips of bandage slung across between the two side bars of the splint; it is attempted to correct the tendency for posterior bowing either (*a*) by tightening the slings under the site of fracture, or (*b*) by inserting a back splint and pad between the slings and the thigh, or (*c*) by bending the splint opposite the knee.

In method (*a*) every time the posterior wound is dressed the bandage slings have to be removed and fresh ones inserted; each step in this procedure, if performed properly, requires special care, is tedious, makes the dressing of the case long, and even when conscientiously done often fails to prevent the occurrence of the backward deformity.

Method (*b*) is open to the same objections, and, further, the pads and back splint tend to move; the results seen after treatment by this method are, however, more satisfactory than by (*a*).

Method (*c*), if one may judge by some of the after-results seen at Alder Hey Hospital, does not always do all that some have claimed for it to correct the deformity

under discussion, and it requires the same careful adjustment and takes the same length of time for dressings as (*a*).

In order to eliminate these and other objections I have devised the splint shown in the accompanying drawings. It is suitable for all fractures in the lower two-thirds of the femur.

In effect it is a double Thomas bed knee splint, an outer and an inner. The outer is the ordinary Thomas splint, and to its end the extension is fixed in the usual way. At the junction of the ring with the inner bar, and at the same level on the outer bar, is a pivot, to which is attached another—the inner Thomas splint (minus its ring); it fits easily within the outer, and is bent four inches from its lower end, so as to raise the whole off the bed (Fig. 1).

FIG. 1.

By raising the outer splint by its end the patient's thigh and leg are also raised, but the inner splint turning on the pivots remains resting on the bed (Fig. 2).

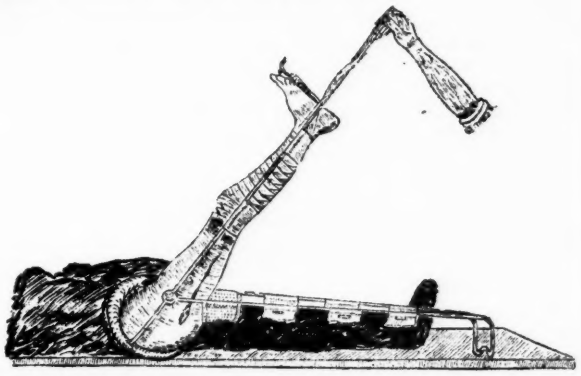

FIG. 2.

On this inner splint are metal slings made of the usual perforated zinc, which are held in the proper position by a few turns of narrow strapping wrapped round the bars above and below; if the posterior wound be small, one sling only is necessary. On the sling or slings a large pad of cotton-wool is placed in such a position that when the outer splint is lowered and both are in the same plane, it is under the site of the fracture. The rest of the limb is slung in bandage supports, taking the usual precautions against genu recurvatum by another smaller pad beneath the knee.

It will be seen that all the pads and slings which support the limb are on the inner splint, although in practice it is found useful to have one sling under the knee on the outer splint, not to act as a pad but rather as a support during dressing.

To dress the posterior wound, the outer splint is raised and held by the nurse or orderly; by this means flexion at the thigh is possible to 50 or 60 degrees, and a good view of the wound obtained. The pivoted inner splint with its

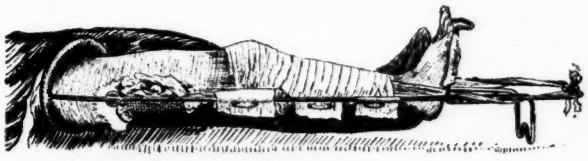

FIG. 3.

pad and slings remains on the bed. The pad, if soiled, is removed, and a fresh one of the same size put in its place. If necessary, also, the zinc slings can be removed quickly and boiled or replaced by similar ones already sterilized. The outer splint is then lowered again, and is fastened at the end to the inner by clips or a piece of bandage (Fig. 3). In most cases it is unnecessary to fix the dressings by bandages, as they are held in place between the pad and the thigh.

It may be argued that while the outer splint is raised the fracture has no support except that which is provided by the extension. This is, however, sufficient for the short period during dressing, and in addition it may be noted that the extra tension put on the hamstrings by flexion of the thigh, the knee being extended, in itself tends to lessen posterior bowing.

I have found by using this arrangement that dressings can be done in less than half the time and with a great deal more ease, that the pads are always in the proper place and remain fixed there, that there is no discomfort to the patient, and that all tendency to posterior bowing is obviated.

It will be obvious that although this splint is primarily designed for cases with a posterior wound it can equally well be applied to those in which there is only an anterior wound which is being chemically sterilized. It is also suitable for those numerous cases met with in this country which are already healed, the bone being recently united with little shortening but posterior bowing and in which there is still tenderness on pressure over the site of fracture. This tenderness is an exceedingly important clinical sign, and indicates, no matter how long since union commenced, that the callus is still soft and can be moulded, and that the patient, even after the deformity is corrected, should only be allowed to walk in a caliper splint.

I would point out also that the method is unnecessary in simple fracture, where perfect results can be obtained by a straight Thomas bed knee splint with fixed extension and coaptation splints.

I am indebted to the Inspector of Special Military Surgery, Major-General Sir Robert Jones, C.B., A.M.S., for permission to describe this splint.

(It will be noticed that the ring of the splint shown in the accompanying drawings is too large for the patient on whom it is being temporarily used. This is a defect which it is important to avoid whenever possible.)

DELAYED PRIMARY SUTURE OF WOUNDS.

BY

H. H. HEPBURN, M.C., TEMP. MAJOR R.A.M.C.

THE medical history of the war will probably acknowledge "delayed primary suture" as the fashionable treatment of wounds for the year 1918. It is a procedure applicable also to casualty work of civilian practice. This method of treating wounds, which came into general use in the British military hospitals in the early summer, was, I believe, first extensively employed by the French surgeons, who proved its worth. There has been a considerable range of variation amongst different surgeons as to the time limit of what should be termed "delayed primary suture" and what "secondary suture." The period for delayed primary suture, hereafter referred to as D.P.S., might be defined as any time up to the appearance in a wound of granulations visible to the naked eye; but the term should, in my opinion, be confined to those cases in which suture is undertaken on the day of removal of the original packing, all others being classed as secondary suture.

The success of delayed primary suture depends largely upon three factors: (*a*) The thoroughness of the primary operation of cleansing or excision of the wound, (*b*) careful attention to technique at the operation of suture, and (*c*) post-operative care, especially as regards rest and splinting. Owing to the necessity for rapid evacuation it has been impossible to follow all my cases of D.P.S. to a conclusion, but for the purpose of obtaining some definite information on the subject I have kept under observation fifty consecutive cases, in each of the three groups referred to below, until the wounds were completely healed, or the degree of failure established beyond doubt.

Before proceeding to a discussion of the second operation, with which we at the base hospitals are most concerned, I will deal briefly with the preparatory or primary operation. The three ideals to be aimed at in the operation are: (1) The removal of all foreign material and disorganized tissue; (2) sterilization; and (3) absolute dryness of the wound.

A wound from which missiles and shreds of clothing have not all been removed may reasonably be expected to suppurate. The removal of all disorganized tissue, while devoutly to be wished, does not warrant the ruthless destruction of essential structures by massive block excision. I have seen more than one case of a wound, completely excised and perfectly clean, where approximation of the tissues was a physical impossibility, and wondered if a less radical excision, with Carrel treatment, and healing by granulation or secondary suture, might not have given a more satisfactory result. The oedema and infiltration of muscle which is so frequently seen during the first few days after injury render the approximation of the retracted ends of a muscle extremely difficult when complete transverse section has been complicated by extensive resection. It should also be borne in mind that every fraction of an inch of skin is valuable, particularly on the forearm and the lower part of the leg, where the skin is usually found to be under considerable tension at the time of suture. It has already been demonstrated that many wounds can be satisfactorily cleansed for suture by the vigorous application of soap and water without complete excision.

Sterilization is largely effected by the mechanical measures referred to above. When a wound has been completely excised under aseptic conditions I can see no necessity for the introduction of antiseptics, but when there is a doubt about the thoroughness of the excision or wound toilet, an antiseptic pack may have a decided advantage over plain gauze. Most of my cases have been packed with flavine gauze, which to my mind leaves on removal a cleaner and drier wound than either eusol or bismuth-iodoform paste.

Dryness of the wound is essential. In my experience a wound arriving at the base with a large blood clot under the pack invariably does badly. The time spent in ligaturing small vessels is by no means wasted, and indeed is imperative unless the pack be firmly stitched in.

It is important that the primary operation of wound toilet, or excision should be carried out as early as possible. The chance of successfully cleansing a wound appears to diminish slowly during the first twelve hours, and rapidly after the first twenty-four.

The elapse of time between the primary operation and delayed suture has varied in my cases from twenty-four hours to five full days. I can see no difference in the cases of twenty-four and forty-eight hours, but there is undoubtedly a difference between the cases of forty-eight hours and those of four days' interval. Consequently I regard the optimum period for D.P.S. as being within fifty hours of the primary operation, and preferably on the second day. With an interval of forty-eight hours the patient has had time to recover from the first anaesthetic, also if a virulent infection be present it will probably have asserted itself by that time, in which case we are warned against attempting to suture.

So far I am unable to state any scientific index of suitability for D.P.S., and am of the opinion that one must be guided entirely by the naked-eye appearance of the wound, coupled with general clinical observations. I attempted to work out a bacteriological index, but gave it up after a series of 50 cases, as several wounds, showing one or less than one pyogenic micro-organism per microscopic field, suppurated, whereas others showing from ten to twenty healed perfectly.

Bacteriological Table of Smears from 50 Cases Immediately before Final Toilet.

No. of Micro-organisms per Microscopic Field.	No. of Cases.	Complete Success.	Partial Success.	Complete Failure.
One or less than one per field	37	33	3	1
Two to four per field	5	4	1	—
Five per field	1	—	1	—
Ten to fifteen per field ...	3	1	2	—
Twenty per field	3	3	—	—
Forty per field	1	—	—	1

Streptococci were present in every case except one.

A wound which is suppurating mildly may be partially stitched, with provision for drainage, and do well, but I have not seen a wound containing pus completely sutured without failure. Consequently the indications on which I decide to carry out complete D.P.S. are: (1) A wound free from macroscopic pus, and (2) the absence of general contra-indications, such as toxaemia, rapid pulse-rate, or undue elevation of temperature. I do not defer suture on account of temperature unless both the morning and evening temperatures are above 100° F., or one of them is above 101°.

The presence of a compound fracture does not contra-indicate D.P.S. provided one is reasonably sure of cleansing the damaged bone. Compound fracture of the femur is probably an exception. I have had bad results in every case of D.P.S. complicated by compound fracture of the femur, and am of the opinion that it is too dangerous to be justified, even by the report of an occasional success. Fracture cases where there has been an unobliterated cavity in the bone, frequently, but not invariably, suppurate, and require removal of one or more stitches for drainage, without complete failure.

In dealing with patients prepared at a casualty clearing station for D.P.S., and labelled as such, my procedure has been as follows:

As most of the cases have arrived during the night, I have two pulse and temperature records available at my morning visit. If the general condition of the patient does not contraindicate operation or the administration of a general anaesthetic, he is taken to the operating theatre without having his dressings removed. He is anaesthetized, and all dressing except the pack removed. A wide area of skin surrounding the wound is vigorously swabbed with a 5 per cent. solution of picric acid in spirit, care being taken that the skin edges about the pack do not escape the application. The pack is then removed, and if there is obvious pus in the wound the case is declared unfit for D.P.S. A dressing of eusol or flavine gauze is applied, and the patient returned to his ward for further treatment with a view to secondary suture. If no pus is visible on removal of the pack the wound is considered fit for D.P.S. In dealing with a very large wound, part of which is clean, it is frequently justifiable, as I have already intimated, to do a partial suture in order to reduce the absorbing surface and the pain of dressings, but it has been my experience that wherever possible complete closure of the wound should be carried out. Small drains of rubber tissue may be inserted between stitches and removed after forty-eight hours. Flakes of coagulated lymph, small blood clots, and a certain amount of fresh blood are usually seen in a wound after removal of the pack, and the question of final cleansing arises. This will be discussed below. After the final toilet the wound is closed, preferably in layers, approximating the deeper tissues with interrupted sutures of catgut and the skin with silkworm gut. Where tension on the skin is excessive it is advisable to introduce at some distance from the line of suture one or more tension stitches, having the ends guarded by buttons or bits of rubber tubing. These stitches may be removed on the second day. When stitching has been completed the area is again painted with a solution of picric acid in spirit and a dry dressing applied, with sufficient bandage or splinting to ensure absolute rest to the part.

To determine whether an antiseptic lavage had any advantage over wiping with plain dry gauze in the final toilet of the wound, after removal of the pack I carried out observations on three series of fifty cases each, where the final toilet was (*a*) an aqueous solution of flavine (1 in 1,000), (*b*) ether, and (*c*) wiping with dry sterile gauze.

The following table shows the comparative results:

Three Groups of Fifty Cases each, of Similar Severity.

Final Toilet.	Percentage of Primary Union.								
	100 %	90 %	80%	70%	50%	30%	20%	Complete Failure.	Average.
Flavine	38	7	3	—	—	—	—	2	93.40 %
Ether	39	5	—	—	2	1	1	2	90 %
Dry wipe	25	14	1	6	2	1	—	1	87.80 %

It would appear that flavine is slightly more efficacious than ether, and both are better than simple dry toilet. Flavine undoubtedly delays healing in a wound, and it is seldom safe to remove all the stitches inside of fourteen days.

For the skin preparation I originally used tincture of iodine, but found frequent suppuration about the stitches and a moist dermatitis along the edges of the wound. On the suggestion of Major-General Sir Berkeley Moynihan, who saw some of these cases with me, I discontinued the use of iodine and substituted a 5 per cent. solution of picric acid with entire satisfaction.

Classification of the above 150 Cases.

Nature of Wound.	No. of Cases.	Complete Success.	Partial Success.	Complete Failure.
Wounds of soft tissues—				
Slight	18	17	1	—
Severe	83	57	24	2
Wounds complicated by compound fracture of—				
Humerus	5	2	3	—
Ulna	4	3	1	—
Radius	—	—	—	—
Femur	2	—	—	2
Tibia	8	6	1	1
Fibula	3	3	—	—
Other bone	5	4	1	—
Wounds complicated by penetration of joint—				
Elbow	2	2	—	—
Knee	8	4	4	—
Ankle	1	1	—	—
Amputation stump—				
Arm	1	—	1	—
Forearm	2	2	—	—
Thigh	4	1	3	—
Leg	4	—	4	—
	150	102	43	5

The post-operative treatment of cases of D.P.S. should be carried out as though dealing with fractures. The patient should be confined to bed and the part splinted, if possible, until healed, when graduated movements should be ordered.

The conclusions drawn from my experience of the last five months with D.P.S. are as follows:

1. That a large number of wounds considered by surgeons at casualty clearing stations to be unfit for immediate primary suture may be safely closed a couple of days later at a base hospital without intermediate treatment, thereby materially reducing the disability and shortening the stay of patients in hospital. Over 90 per cent. of the prepared wounds which I have seen were fit for D.P.S.

2. That the primary cleansing operation should be carried out as early and completely as possible, without undue sacrifice of tissue, and with careful attention to haemostasis. The wound should be firmly packed, and the patient labelled, "For D.P.S."

3. That the best results may be expected from complete D.P.S. carried out between twenty-four and fifty hours after the primary operation.

4. That there is at present no reliable bacteriological standard of suitability for D.P.S., but that any wound which is free from macroscopic pus after having been packed for forty-eight hours may safely be closed in the absence of grave constitutional signs.

THE Bedfordshire County Council has purchased Mogerhanger Park of 27 acres, with the mansion, for a county sanatorium. It has also purchased certain huts at Ampthill military camp. It is estimated that the sanatorium, which will provide 80 beds, will cost £12,000, including £2,000 for furnishing.

THE DETECTION OF SACCHAROSURIA, INOSITURIA, AND LACTOSURIA BY A MYCOLOGICAL METHOD.

BY

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SOME time ago (BRITISH MEDICAL JOURNAL, December 29th, 1917) we described a mycological method for the detection and determination of various sugars and other carbon compounds, mostly Fehling-reducing, met with in physiological and pathological work.

We thought that just as various carbohydrates and other carbon compounds are used in the identification of certain bacteria and higher fungi, the reverse process might also be carried out and bacteria and higher fungi used for the detection of certain chemical substances. For many years ordinary baker's yeast (so-called German yeast) has been, of course, used to detect glucose, but this is the only sugar for which a purely mycological method has been used in pathological work, and, as a matter of fact, it is an unscientific method, as ordinary yeast almost constantly ferments maltose, saccharose, and other sugars in addition to glucose. Our method might be called "conjugated or parallel mycological method," as we do not use one species of germs only; we generally use two or more and compare their action on the substance to be determined.

The simplest way of carrying out our method to determine whether a substance is or is not a certain carbohydrate is to test on that substance, whenever possible, the action of two germs known to be identical in all their biochemical reactions except on that particular carbohydrate. For instance, in order to see whether a certain chemical substance is maltose, we test it with two germs which are known to be identical in all their biochemical reactions except on maltose, one fermenting this sugar, the other not. To carry out the method an exact knowledge is necessary of the biochemical reactions of a certain number of bacteria and higher fungi.*

SACCHAROSURIA.

Spontaneous saccharosuria is an extremely rare condition, but artificial saccharosuria is not so very rare among malingerers; we have come across three cases in which saccharose had been added to the urine with the object of misleading the medical officer. The medical man who uses as routine the usual Fehling's method is not apt to diagnose such cases as glycosuria, as saccharose does not reduce, at any rate not very clearly, Fehling's solution; but the medical man who uses what is considered to be, by most authorities, the more exact method of yeast fermentation will very likely fall into error, because though in so many textbooks it is stated that glucose is the only substance fermented by ordinary baker's yeast, we have found that a very large number of specimens of baker's yeast will ferment saccharose and also levulose, maltose, etc., in addition to glucose.

Mycological Tests to Determine Saccharose.

According to our method various tests may be evolved to determine whether a certain carbohydrate of those found in pathological urine is or is not saccharose; we give here a few of these tests in the convenient shape of mycological formulae:

I. *B. coli* Escherich 0
B. neapolitanus Emmerich ... ... + } = Saccharose.

+ = Presence of gas. 0 = Absence of gas.

The explanation lies in the fact that *B. coli* and *B. neapolitanus* are identical as regards their biochemical

* The reader may perhaps find it useful to consult the tables of biochemical reactions of various fungi and bacteria published by one of us in various medical journals; some of the more recent ones may be found in a paper by one of us in the *Journal of Tropical Medicine*, August 15th and September 15th, 1917. Similar tables may be found in Castellani and Chalmers's *Manual of Tropical Medicine*, second edition, pp. 822 (moniliae) and 1380 (bacteria); and as regards the bacteria, Hewlett's *Manual of Bacteriology*, sixth edition, pp. 428–433.

reactions on all the sugars and other carbon compounds usually found in pathological urine except on saccharose. *B. coli* Escherich does not ferment saccharose, while *B. neapolitanus* Emmerich ferments it with production of gas. If therefore a certain carbohydrate is fermented (gas present) by *B. neapolitanus* Emmerich and not by *B. coli* Escherich, the inference is that it is saccharose.

II. *B. coli* Escherich	0	=Saccharose.
B. asiaticus Castellani	+	

The explanation of this is that *B. coli* and *B. asiaticus* differ only in saccharose, lactose, dulcite, and salicin. *B. coli* does not ferment saccharose, while *B. asiaticus* ferments it; on the other hand *B. coli* ferments with production of gas lactose, dulcite, and salicin, while *B. asiaticus* does not. If a carbohydrate therefore is fermented by *B. asiaticus*, and not fermented by *B. coli*, it is, according to all probabilities, saccharose.

III. *Monilia metalondinensis* Cast.	0	=Saccharose.
Monilia tropicalis Cast.	+	

This is explained by the fact that *Monilia metalondinensis* and *Monilia tropicalis* are identical in all their biochemical reactions except on saccharose, which is fermented with production of gas by *Monilia tropicalis* and not fermented by *Monilia metalondinensis*.

IV. *Monilia pinoyi* Cast.	0	=Saccharose.
Monilia rhoi Cast.	+	

The explanation lies in the fact that *Monilia pinoyi* ferments with production of gas only glucose, levulose, maltose, and *Monilia rhoi* only glucose, levulose, maltose, and saccharose. If a substance therefore is not fermented by *Monilia pinoyi* and is fermented with production of gas by *Monilia rhoi*, it must be saccharose.

To the above purely mycological formulae we add a chemico-mycological formula which may be found useful in practice:

Fehling	0	=Saccharose.
Monilia bronchialis Cast.	+	

This is explained by the fact that *Monilia bronchialis* ferments with production of gas glucose, levulose, maltose, saccharose, and no other substance. If Fehling is negative it cannot be any of the first three substances as they are all Fehling-reducing, and it must therefore be saccharose.

Technical Details.—The urine is collected aseptically or, if this is not feasible, is distributed in sterile tubes (each containing a small fermentation tube) as soon as passed and then sterilized in Koch's stove for 30 minutes on two or three consecutive days. It should never be autoclaved, as autoclaving may alter the composition of the sugars and other hydrocarbonates present. Two tubes of the aseptic urine to which one-third or the same amount of sterile, sugar free, peptone water has been added, are inoculated according to the formulae quoted: for instance, No. 1 with *B. coli* Escherich, and No. 2 with *B. neapolitanus* Emmerich. The two tubes are incubated at 35° to 37° for twenty-four to forty-eight hours and then examined. If tube No. 1 shows no gas, and tube No. 2 shows presence of gas, the urine according to all probabilities contained saccharose.

Detection of Saccharose when Mixed with other Fermentable Substances.—Exhaust the urine with *B. coli* Escherich, and later, after filtration through a Chamberland filter, or prolonged centrifugalization, inoculate it with *B. neapolitanus* Emmerich. If the urine is still fermentable the presumption is that in addition to other fermentable substances, which can be found by our general method,[1] the urine contains saccharose.

Let us make an example: Suppose the test of the urine gives the following results:

Tube No. 1 (*B. coli* Escherich)	+
Tube No. 2 (*B. neapolitanus* Emmerich) ...	+

This means as a rule that the fermentable substance is not saccharose; it does not exclude, however, with absolute certainty the possible presence of saccharose in the urine, in addition to other fermentable substances. In order to see whether this might not be the case, the urine of No. 1 tube (*B. coli* Escherich) after exhaustion is repeatedly centrifuged or filtered through a Chamberland, placed in two smaller tubes (3 and 4), and on these the test is repeated, No. 3 tube being inoculated with *B. coli* Escherich and No. 4 tube with *B. neapolitanus* Emmerich. If after twenty-four to forty-eight hours gas is absent in Tube 3 and present in Tube 4, saccharose must have been present, in addition to other fermentable substances.

The precaution should be taken of using strains of *B. coli* Escherich and *B. neapolitanus* Emmerich having approximately the same fermentation power on the carbohydrates they both ferment.

Inosituria.

Inosite, as is well known, does not reduce Fehling; it is not really a sugar, belonging to the aromatic series. It is not of very rare occurrence in the urine; it is, for instance, not infrequently found in diabetes insipidus, but the chemical methods of detecting it are far from easy or rapid. On the other hand, inosite, provided it is present in the urine in not too small a quantity, can be detected and determined with comparative ease by our mycological method.

Two tubes of urine collected aseptically or sterilized as already described, are mixed with one-third, or the same amount, of sugar-free peptone water and inoculated, No. 1 with *B. paratyphosus* B, Schottmüller (M variety, which ferments inosite), and No. 2 tube with *B. paratyphosus* A, Schottmüller (does not ferment inosite). The two germs, as regards carbohydrates and other pathological substances found in the urine, differ only in their action on inosite. Therefore if, after twenty-four to forty-eight hours' incubation at 37° C., gas is present in No. 1 tube, and absent in No. 2 tube, we have to deal with inosite. This can be conveniently expressed by the following formulae:

B. paratyphosus B, Schottmüller, var. M	+	=Inosite.
B. paratyphosus A, Schottmüller ...	0	

If the result of the experiment should be:

B. paratyphosus B, Schottmüller, var. M ...	0
B. paratyphosus A, Schottmüller	0

it means that the substance is neither inosite nor any other substance fermentable by *B. paratyphosus* B, var. M, or *B. paratyphosus* A, hence it cannot be glucose, levulose, maltose, saccharose, etc.

If the result of the test is:

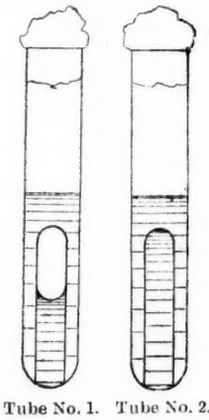
B. paratyphosus B, Schottmüller, var. M ...	+
B. paratyphosus A, Schottmüller	+

it means in general that the urine does not contain inosite but other fermentable substances.

Still, the possible presence of inosite in a mixture with some fermentable substance, such as glucose, maltose, saccharose, etc., cannot be absolutely excluded. If such condition be suspected, exhaust the urine with *B. paratyphosus* A, and then inoculate with *B. paratyphosus* B, var. M, using strains having approximately the same fermentation power. If gas is produced, the inference is that the urine contained inosite in addition to other fermentable substances, which can be determined by using our general method.

Lactosuria.

Next to glucose, lactose is the commonest sugar found in the urine. It is frequently met with in the urine of nursing mothers. Lactose, as well known, reduces Fehling's solution, and not infrequently lactosuria has been mistaken for true glycosuria. It is most important to distinguish between the two conditions, as lactosuria is not a very serious condition, while glycosuria, especially in nursing women, is of grave prognosis. The chemical detection and determination of lactose is difficult for an ordinary medical man. In most text-books it is stated that if a urine reduces Fehling, and is not fermented by ordinary baker's yeast (so-called German yeast), the presumption is that the reducing substance is lactose. There are, however, two very important sources of error.



Tube No. 1. Tube No. 2.

Detection of lactosuria: Tube No. 1, containing urine inoculated with *B. coli* Escherich. Gas present. Tube No. 2, containing same urine inoculated with *B. paratyphosus* B, Schottmüller. Gas absent.

First, quite a number of specimens of baker's yeast ferment lactose in addition to glucose, maltose, and other sugars; second, even if the baker's yeast should not ferment lactose, this is not the only Fehling-reducing substance which may not be fermented by baker's yeast—the pentoses, for instance.

If a urine which reduces Fehling is not fermented by ordinary yeast we cannot, therefore, come to the conclusion that it is a case of lactosuria.

Detection and Determination of Lactose by our Mycological Method.

This method can be carried out in various ways. Herewith a few mycological formulae as an example:

I. *B. neapolitanus* Emmerich	+	=Lactose.
B. pseudoasiaticus Cast.	0	

The explanation lies in the fact that *B. neapolitanus* and *B. pseudoasiaticus* differ only in lactose as regards sugars and other carbohydrates found in pathological urines.

II. In a Fehling-reducing urine, for practical purposes, the following formula is also correct:

B. coli Escherich	+	=Lactose.
B. paratyphosus B, Schottmüller ...	0	

B. coli and *B. paratyphosus* B, besides lactose, differ in their action on raffinose and salicin, but raffinose and salicin are not carbon compounds found in the urine, and at any rate they are not Fehling-reducing, and therefore this formula may be considered to be specific for practical purposes.

III. *Monilia metalondinensis* Cast.	0	
B. coli Escherich	+	=Lactose.
B. paratyphosus B, Schottmüller ...	0	

The technical details for carrying out the test are identical with those already mentioned in connexion with the search for saccharose, etc.

ADDENDUM.

For the reader's convenience we quote here some of the principal mycological formulae which we have devised and employed for the detection of certain sugars and other carbohydrates in pathological urines.

Urine Fehling-reducing.

1. *Monilia balcanica* Cast.	+	=Glucose.
2. *Monilia balcanica* Cast.	0	=Levulose.
Monilia krusei Cast.	+	
3. *Monilia krusei* Cast.	0	=Maltose.
Monilia pinoyi Cast.	+	
4. *Monilia pinoyi* Cast.	+	=Maltose.
Monilia parachalmersi Cast.	0	
5. *Monilia pinoyi* Cast.	0	=Galactose.
Monilia metalondinensis Cast.... ...	+	
6. *Monilia pinoyi* Cast.	0	=Galactose.
Monilia parachalmersi Cast.	+	
7. *Monilia metalondinensis* Cast. ...	0	=Pentoses.
Bacillus coli Escherich	+	
Bacillus paratyphosus B, Schottmüller.	+	
8. *Monilia pinoyi* Cast.	0	=Pentoses.
Monilia parachalmersi Cast.	0	
Bacillus coli Escherich	+	
Bacillus paratyphosus B, Schottmüller.	+	
9. *B. coli* Escherich	+	=Lactose.
B. paratyphosus B, Schottmüller ...	0	

Urine not Fehling-reducing.

1. *B. coli* Escherich	0	=Saccharose.
B. pseudocoli Cast.	+	
2. *Monilia pinoyi* Cast.	0	=Saccharose.
Monilia rhoi Cast.	+	
3. *B. paratyphosus* B, var. M, Schottmüller	+	=Inosite.
B. paratyphosus A, Schottmüller ...	0	

+ = Production of gas; simple acid fermentation is not taken into account. 0 = No gas.

All the above formulae are easily understood when the biochemical reactions of the various germs used are kept in mind. These reactions may be found in papers we have already quoted.

REFERENCE.

[1] BRITISH MEDICAL JOURNAL, December 29th, 1917.

IN accordance with the Government's decision to establish a central authority for the disposal of all surplus Government property, the Minister of Munitions has set up an organization for this purpose, consisting of a board, to be called the Surplus Government Property Disposal Board, and an advisory council. No property surplus to the requirements of the various Government departments will in future be disposed of except through, or by arrangement with, the Disposal Board. The departmental organization consists of seventeen sections, each with a controller responsible to the board and assisted by an honorary advisory committee. The controller of the section of medical stores, equipment, and instruments is Mr. W. J. Woolcock, O.B.E., M.P. Communications should be addressed to the Secretary, Disposal Board, Armament Buildings, Whitehall Place, S.W.1.

Reports of Societies.

THE TEACHING OF OBSTETRICS AND GYNAECOLOGY.

A DISCUSSION on reconstruction in the teaching of obstetrics and gynaecology to medical students took place at the meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine on February 6th, when the president, Mr. JOHN D. MALCOLM, was in the chair. Dr. W. S. A. GRIFFITH opened the discussion with the general survey of the subjects to be taught and of the methods of teaching, which was published in the JOURNAL last week (p. 148).

The Standpoint of Preventive Medicine.

Dr. JOHN S. FAIRBAIRN, Obstetric Physician to St. Thomas's Hospital, said that midwifery and the diseases of women must be considered as two branches of one subject and studied clinically at the same time and under the same teachers. The student must not be allowed to put in his maternity courses at a time dictated solely by his own inclinations, and often independently of his gynaecological clerkship. For the training of students a medical school must provide (1) a complete maternity centre, with in-patient and out-patient accommodation for the pregnant woman, the woman in labour, and the mother and nursling; (2) a department for diseases of women; (3) a full staff of workers consisting of (*a*) medical—the visiting and resident medical officers, with their understudies, the students; (*b*) nurses and midwives for indoor and outdoor patients; (*c*) almoners and health visitors for visiting the patients in their homes, for staffing the social and educative organizations for the mothers, and for forming the connecting link with outside agencies for the assistance of patients. During his time in the department, which at present is three months, the student should be taught not merely to look for the beginnings of disease and for warnings that might spell danger later, but to consider the individual character, mode of life, and home conditions of each patient as factors in her case. In the maternity ward the student, having already learnt the routine of surgical cleanliness in the operating theatre, would find no difficulty in applying it to the woman in labour. During the month spent in this ward all preventable conditions should be discussed—as to why they were not foreseen and what could have been done. It was useful to have a few pupil midwives attending the clinical instruction in the lying-in wards with the students; this afforded occasions for discussing the duties of the midwife and her relation to the medical practitioner, so that both the pupil, midwife, and the medical student learnt their respective spheres in the health service of the community. After this period the student should attend the rest of his cases in the district, where he would learn to adapt methods learnt under ideal conditions to circumstances which might be the reverse. Greater effort should be made to stimulate the interest of the student in the study of the baby; the question where the dividing line between obstetrics and pediatrics should be drawn was thus raised. There was something to be said for mother and nursling remaining under the obstetric department, and the weanling and older children under the children's department. At St. Thomas's Hospital it was proposed to appoint a special officer for the child welfare clinics; such an officer would begin by taking part in the teaching on the infant in the maternity ward, where he would become known to the mothers, and learn to know them, thus preserving continuity from the maternity clinic to the baby clinic. Only three or four beds for mothers and nurslings would be required, unless the department was very large. To these beds would be admitted cases of difficult breast feeding, and the like. Dr. Fairbairn urged that every student should have six months' training in obstetrics, gynaecology and pediatrics, the last three months being spent in the various children's clinics. Teachers had been so absorbed in operative work, and hospital accommodation so monopolized by operation cases, that the teaching material was in no way representative of the future practice of students. The mental attitude of teachers towards patients and their symptoms had lost balance and swung too far towards mechanical explanations—

displacements and kinks and hypothetical local affections—and mechanical cures by operations of the "pexy" and "ostomy" type in the devising and carrying out of which much ingenuity and manipulative skill had been expended. The resulting tendency had been to overlook the most common of all factors in the production of disability—overstrain and mental stress; the balance must be redressed. Gynaecological beds should be occupied by cases closely representative of general practice; the necessity of considering the psychological factor should be impressed upon the student, who should be taught to study and treat not merely the disease, but the individual patient and the special problem she presented.

The Standpoint of the General Practitioner.

Dr. Lovell Drage said that the matter was only a part of the whole subject of the education of the medical man. There was an increasing demand upon the time of the student by the teachers of special departments, and where work was very specialized examiners were usually hard taskmasters. Time could be saved by the exclusion of the preliminary subjects, which should be undertaken before registration as a student. The student began the study of obstetrics and gynaecology with a course of lectures and instruction in the wards, after similar lectures and instruction in medicine and surgery. A very large part of gynaecology should be treated as part of the course in surgery. The teachers of midwifery and diseases of women should give special attention to the various infective agents. Judgement made all the difference in results, but it was difficult to know what course of training would produce this desirable quality. If students were not only trained but educated, a very short time would enable them to grasp all the details of obstetrics and gynaecology, and three months would be sufficient for them to give to preparation for the examination. It had been said that under the Ministry of Health many appointments connected with maternity and childhood would be created, and that it was the duty of medical schools to train people to undertake them; but it appeared to him that the work would be such that any sufficiently trained midwife would be able to undertake it. The practitioner who undertook it would find himself at a dead end; it would be ordinary hack-work conducted under rules and regulations, involving an immense amount of clerical work and a life of destructive stagnation. The one course, in which real education was attempted, would be attended by students who intended to practise in obstetrics; a second course, in which no more than training was given, would be attended by those who undertook to take up hack-work at maternity centres; students who did not intend to practise obstetrics would attend neither. The proportion of the fit to the unfit born into the world was probably about the same as it had always been, but the medical profession was preventing to a considerable extent the loss amongst the unfit, and it did not appear that the supervision of pregnant mothers would produce any other result than that of raising up to maturity more unfit persons. The production of a healthy stock depended upon the healthy conditions of the parents; the resistance to diseases depended upon factors at present little understood. The practical question was whether a large expenditure of public money was justified in the absence of any reason for supposing that a larger stock of healthy children, with a strong resistance to disease, would result.

Discussion.

Dr. Amand Routh said that in a lying-in hospital the ante-natal clinic should obviously be an important part of the training of students and midwives, and should be attended by those actually engaged in their practical midwifery. Amongst the subjects to be taught were: the recognition of venereal disease and the recently proved safety of dealing with syphilis by salvarsan during pregnancy and after birth; the recognition of tests for early toxaemia, especially now that accidental haemorrhage, with its 75 per cent. of fetal mortality, was believed to be often toxaemic in origin and might be preventable; pelvic contractions, both major and minor varieties; the significance of the previous maternity history of the mother and her children; such complications as heart and bronchial disorders, old kidney disease, diabetes, Graves's disease, and pregnancy pyelitis. Labour, whether natural, prematurely induced, manipulative or operative, should be taught in the maternity wards, and knowledge should be imparted regarding lactation, and hand feeding where lactation failed. Students should be taught to assist in laboratory research of all kinds, such as special urinary tests for toxaemia, examination of all expelled products of conception for detection of spirochaetes and other causes of death, attempts to unravel the mysteries of toxaemia, and of the functions of the syncytial ferments, examination of milk, etc. Opportunities should be found for giving students information on the causes of sterility by malformations, gonorrhoea, or as the result of operations, plumbism, *x* rays, etc.; on the causation of the low birth-rate, such as sterility, criminal abortion, and methodical, chemical, or mechanical restrictions to childbearing. The responsibility of doctors in cases of criminal abortion was a useful subject to learn before private practice began. In urging the necessity for better obstetrical teaching it was important to contemplate the fact that out of 1,000 conceptions probably 250 infants died during gestation and before their first birthday, and that this proportion of deaths was doubled in illegitimate cases. Dr. Drage's statement that "medical supervision would do no more than raise up to maturity more unfit adults" was extraordinary. There seemed every reason to believe that if the methods advised in the two addresses were carried out at least half the ante natal and early post-natal infantile deaths would be avoided, for doctors would be thoroughly equipped in the knowledge of the preventive hygiene of pregnancy, parturition, and the puerperium.

Dr. G. F. Blacker held that the standard of teaching in obstetrics and gynaecology was on a lower level than that of other subjects because the teaching was largely done by junior officers, and the students seldom saw the obstetric physician perform an operation or deliver a case, or heard him teach in the ward. Five or six large special hospitals should be provided in or about London, equipped with pathological laboratories and staffed by senior whole-time paid teachers and assistants. There should be a four months' course, two of which should be devoted to gynaecology and two to obstetrics, and of these one should be for intern and one for extern work. The teachers must be engaged in original research, facilities for which should be supplied.

Dr. T. W. Eden placed the responsibility for the poorness of teaching at the present time on the system of multiple hospitals. This arose from the over-staffing of the hospitals so that each member of the staff of one hospital found it necessary to seek additional clinical material in another. Moreover the clinical material in the hospitals was not representative of the future work of the students.

Dr. W. Eardley Holland attributed the neglect of the student to (1) the claims of the midwife, who had absorbed most of the lying-in beds; (2) the apathy of modern gynaecologists towards ordinary work; (3) the idea that it was unnecessary to train the student to a high standard if this could not be maintained in after-life. That obstetrics and gynaecology should be treated as separate subjects was the opinion of a few who thought that by this means the obstetrician could devote more time to the baby; but he would like to see the infant taken over entirely from its birth by the pediatrician, who should also be responsible for the corresponding teaching and research. He disagreed with Dr. Drage with regard to ante-natal supervision. It permitted a diagnosis of the presentation, of the presence of syphilis, albuminuria, tumours, etc. Moreover, the mothers suffered from neglect of supervision as well as the babies.

Sir Walter Fletcher accentuated the importance of the teaching of the normal physiology of reproduction, including lactation, subjects at present imperfectly understood by the student, even at the time of his qualification.

Dr. F. J. McCann advocated state subsidized maternity hospitals in London and throughout the country, and the adoption of the Continental system of whole-time resident assistants, paid a salary of, say, £500 a year. The appointment should be for five years, and the holders should travel for at least one month annually in order to bring back reports of the work in other schools. Means must be found to retain the poor man who had ability. The need had been accentuated now that the training of midwives and nurses had to be undertaken. Till such

hospitals were established London would not take its place as a leading teaching centre.

Dr. E. L. COLLIS, Director of Welfare, Ministry of Munitions, pointed out that now women were being employed industrially to such a great extent, students should be given definite instruction as to the amount and kind of work which a pregnant woman should be allowed to do, and should be put into a position to answer questions which might arise in the course of his work as medical officer to a factory.

Mr. VICTOR BONNEY said that teaching must be judged by its results. The maternal death rate due to pregnancy and labour had remained constant for the past seventy years in spite of great progress in knowledge. Deaths still occurred from toxaemia and sepsis. Pregnancy was the growth of a neoplasm; labour was the occurrence of self-inflicted wounds; the puerperium was the healing of those wounds. A great proportion of deaths could be prevented by the application of surgical principles. He hoped to see the day when midwifery would be regarded as a subsection of surgery and taught as such.

Dr. H. WILLIAMSON preferred the clinical system to that in vogue on the Continent. Obstetrics and gynaecology should be studied simultaneously. Each student should be compelled to train for one month in a lying-in hospital before doing extern work, and should personally deliver four or five women under competent supervision. This instruction was now largely left to midwives. Every general hospital should have a lying-in ward, officered by a good teacher who knew his work. He did not agree that a large institution was necessary, for it would introduce the German system of lectures and demonstrations. Students should be examined by their own teachers, in the presence of an assessor if thought desirable. The three causes of failure were haphazard training, fallacious examination, and the absence of an atmosphere of research.

Dr. LAPTHORN SMITH emphasized the necessity of impressing upon the student the importance of examining the urine to forestall eclampsia, and of wearing rubber gloves in order to prevent sepsis.

Lady BARRETT thought that at least six months should be devoted by the student to the study of the two subjects, of which at least one month should be spent at a lying in hospital before doing outside maternity work. A month should also be spent in the combined study of the pathology and physiology of obstetrics and gynaecology, the student at the same time keeping in touch with the clinical aspect of the work by attending the physician in the wards and exhibiting the specimens from the cases.

Dr. R. W. JOHNSTONE described the methods of teaching in vogue in Scotland. Teaching, including that of minor cases, should be done by the senior staff. He did not agree with the appointment of a whole-time teacher; the emoluments would not be such as would attract the best type, and the teacher, being out of touch with the conditions of general practice, would become unable to impart to the students what they would be likely to require.

Dr. T. G. WILSON compared the teaching of this subject in London with that of other large centres. With its valuable clinical material he attributed the failure to attract overseas students to a faulty system of teaching. In such hospitals as the Johns Hopkins there were working under the head of the department as many as five or six assistants, who were only permitted to teach the students after having acted as assistant for three or four years, and having done at least one year's pathological work in the department. The subject could be taught as well in a small as in a large institution.

Dr. H. RUSSELL ANDREWS agreed with the general propositions that obstetrics and gynaecology must be taught together, that old-fashioned formal lectures were not of great value, and that students should not be sent out to attend patients in the district until they had had a thorough midwifery training in the wards. He agreed with Dr. Lovell Drage that the "medical profession prevents to a considerable extent the loss among the unfit," but felt much more deeply that the medical profession did not prevent a large unnecessary loss among the fit. The only way to achieve this was by improving the teaching of midwifery. He disagreed emphatically with Dr. Lovell Drage's opinion that supervision of pregnant women would produce no other result than that of raising up to maturity more unfit adults. He pointed out that in cases of syphilis and in minor degrees of contraction of pelvis, to take only two examples, supervision of pregnant women resulted in the production of A1 citizens. He considered that a department for medical supervision of pregnant women formed an integral part of a modern teaching hospital.

Dr. GRIFFITH replied.

DIFFUSE EMPHYSEMA OF THE WALL OF THE SMALL INTESTINE.

A MEETING of the Pathological Section of the Royal Society of Medicine was held on February 4th, with Professor WILLIAM BULLOCH, F.R.S., President, in the chair.

Mr. C. A. R. NITCH and Professor S. G. SHATTOCK, F.R.S., described a remarkable example of this rare condition, which was unexpectedly found during an operation carried out for a simple stricture of the duodenum immediately beyond the pylorus, associated presumably with the presence of an ulcer.

The patient had suffered for many years from pyloric obstruction, the stomach being so dilated as to reach the crest of the ilium; he had been in the habit of washing out the organ with a soft rubber tube. Gastro-enterostomy was successfully performed, after which the symptoms completely disappeared. A small V-shaped piece of the affected intestine was removed for the purpose of investigation, the parts being immediately sutured, without untoward result. In this the gas cysts were found to lie beneath the mucosa, the other tissues being here uninvolved. When exposed, the whole of the small intestine with the exception of the duodenum and the first part of the jejunum was covered with blebs of gas. The condition itself fell into a group to which the name "pneumatoses" had been applied [1]—a group which included the various lesions due to the presence of air or of gas in the different structures or cavities of the body. Into it fell, besides bacterial and mechanical emphysemas, the aspiration of air into the vagina, or rectum, oesophagus, and stomach; into the peritoneum during laparotomy; the passage of gas from the intestine into the peritoneal cavity apart from discovered perforation in cases of chronic obstruction, etc. The entry of air during operations carried out in the Trendelenburg position, upon the bladder or vagina, was due, of course, to the negative pressure caused by the gravitation of the abdominal viscera; in oesophagoscopy the inflation of the canal arose from the negative pressure within the thorax. After punctured valvular injuries of the abdominal parietes, a local emphysema was at times observed (W. H. C. Romanis), due to the inspiratory movements, which was liable to be misdiagnosed as indicative of perforation of the intestine.

In birds, Hunter had pointed out that fracture of the bones containing air might be followed by a local emphysema. The only homologue of such a result in the human subject was furnished by the escape of air that sometimes took place from the frontal sinus after fracture.

In discussing the etiology of the condition recorded, a bacterial factor was excluded by the study of sections made from the piece excised; nor during life did the tissues exhibit any traces of inflammation. The cysts or spaces were lined with a single layer of endothelium, a multinucleated cell being here and there intercalated. After excluding a secretion or liberation of gas from the tissue plasma as an explanation, the etiology became reduced to a mechanical one. The condition could not be ascribed to distension of the gut itself, since there was no obstruction on the distal side; but air or gas must have been driven from the distended stomach through the base of an ulcer immediately beyond the pylorus into the intestinal walls, the peristalsis of the gut facilitating the onward movement of the gas.

Brouardel (*Death and Sudden Death*) had described a case of submucous emphysema of the stomach about a recently perforated ulcer, but proof was wanting that the condition had occurred during life. And the same doubt existed in regard to the case recorded by Haller, in which a tympanitic distension of the intestine was accompanied with the formation of gas blebs beneath the peritoneum.

At the same meeting Dr. J. A. MURRAY communicated a

[1] J. P. Frank: *De Morbis Hominum Curandis*, 1821.

note on bacterial staining methods, and gave a demonstration on specimens and microscopic sections of acariasis in the lung of monkeys, the parasites being found in small foci scattered through the organ.

INTRINSIC CANCER OF THE LARYNX.

AT a meeting of the Medical Society of London, held on February 10th, Major A. F. VOELCKER, R.A.M.C.(T.), President, being in the chair, Sir STCLAIR THOMSON read a paper on this condition. It furnished a sequel to that read before the same society on February 12th, 1912. Laryngeal cancer, he said, was not a common disease, but, fortunately, the intrinsic form was more common than the extrinsic. Of 212 cases Semon found the disease intrinsic in 136. Chevalier Jackson's figures showed that the intrinsic form was more frequent in the proportion of 98 to 43, and Schmiegelow in 66 cases of intralaryngeal cancer found the disease limited to a vocal cord in 36. Only a restricted proportion of cases came to operation, because of delay in diagnosis, and sometimes because the patient did not present himself sufficiently soon. Hence the amount of clinical material was always small. In eighteen years the speaker had only encountered four hospital cases which justified a laryngo-fissure, while he had performed it thirty-four times in the smaller field of private practice. Of these 38 cases of intrinsic laryngeal cancer which had been operated upon, 22 were alive and well, without recurrence, at periods varying from six months to ten years since the operation. Seven cases survived the operation but died from other causes at periods varying from ten months to ten years later. Local recurrence took place in only five. Two cases died from recurrence in the glands, but without recurrence in the larynx. In one this occurred seven and a half years after laryngo-fissure, in the other within seven months. Two cases were alive, but recurred. In one the disease recurred in the glands of the neck one and a half years after laryngo-fissure; the glands were operated upon, and he was now well. In the other recurrence was suspected in the subglottic area and on the opposite side three and a half years after operation.

In these cases, comprising four females and thirty-four males, and varying in age from 40 to 75 years, no patient had died from a cause attributable directly to the operation.

These figures, taken in conjunction with those of Semon, Chiari, and Schmiegelow, confirmed the views that the results were exceedingly good, and compared favourably with those obtained by surgical treatment of cancer in other internal organs, and that the advance was striking. The figures also showed that the first year after operation was the anxious one as regards recurrence. He felt considerably diminished anxiety if the third month passed without a suspicion of re-growth. When an epithelioma was limited to a vocal cord and recurred within twelve months, he would regard it as an incomplete removal. Recurrence was more apt to take place, and after a longer interval, when the anterior commissure or subglottic area was involved. In none of the thirty-eight cases had a laryngo-fissure been performed for cancer and the disease found to be of another character, but in several cases the diagnosis had to be deferred for a time, varying from a few months to a year.

The Operation.

In addition to the usual preparations, the mouth and teeth are rendered as clean as possible and tobacco and alcohol are reduced to a minimum or cut off for three days before. A dose of bromide (15 to 20 grains) is given on the previous evening, but neither morphine nor atropine. Half an hour before the operation the line of the incision is infiltrated with eudrenine (a solution of eucaine and adrenalin). The skin of the neck is purified with soap and water and a carbolic dressing, and not damaged by painting with iodine. A general anaesthetic, preferably chloroform, is given in the usual method. One long incision is made from the thyroid notch to the sternum; 10 to 15 drops of a 2½ per cent. solution of cocaine, to which a few drops of adrenalin are added, is injected intratracheally, and a similar injection made through the crico-thyroid membrane. Median tracheotomy after dividing the thyroid isthmus, if it cannot be hooked upwards and downwards, can then be carried out without spasm or cough. A large-sized Durham tracheotomy tube is then introduced, and the thyroid cartilage divided exactly in the middle line with saw, knife, scissors, or shears. A Killian's median rhinoscopy speculum is then used to dilate and inspect the endolarynx. After application of 5 per cent. cocaine and the insertion of a gauze plug through the thyroid opening over the top of the tracheotomy cannula, the larynx is semi-dislocated sideways to bring the affected cord more *en face*. This is then raised with all the soft tissues by a subperichondrial dissection. The outer perichondrium of the thyroid cartilage is peeled off and the greater portion of the ala clipped away, and the growth subsequently removed, with a good margin around it, with curved scissors. Bleeding is arrested by pressure, the tracheal plug removed, and the thyroid opening closed by drawing the soft tissues together over it. Deep (catgut) and superficial (silkworm and horsehair) sutures close the whole external wound except opposite the tracheal opening. The tracheotomy tube having been removed and a dry gauze dressing applied, the patient is returned to bed in a sitting posture.

Sir StClair Thomson spoke emphatically of the value of open chloroform in these cases, at first through the mouth and later through the tracheotomy cannula. Most of the patients were able to swallow within a few hours, and many of them sat out of bed and read their newspaper the same evening. It was the exception for a patient not to be sitting up in a chair next day and eating semi-solid food. The preliminary infiltration of the skin incision with eudrenine and the intratracheal injection of a 2½ per cent. solution of cocaine greatly contributed to this satisfactory result. He preferred one long incision to the two which had been proposed—that is, one over the larynx and one for the tracheotomy—considering the slight cosmetic gain in the latter procedure more than counterbalanced by the greater facility and safety of one long incision. He could see no gain in abandoning the safeguard of tracheotomy. There was no need to plug off the pharynx through the split larynx. In 25 cases the tracheotomy tube had been withdrawn as soon as the operation was completed, but in 2 it had to be replaced for sharp haemorrhage. He was glad that in both there had been a preventive tracheotomy, and that the skin in the neck had not been stitched up over it. He saw no great objection to retaining the tube for the first day, particularly when there was a tendency to bleeding at the time of the operation, or the patient was congested, or with a history of alcohol and tobacco, or when the growth was very extensive or largely subglottic, or should no experienced surgeon be at hand. Excision of the thyroid ala left no drawbacks and facilitated removal of the growth and control of bleeding.

After-Treatment.

The patients were placed in bed, with a bed-rest, almost sitting upright. The same evening many could sit out of bed, and were able to drink sterilized water. The appearance of a large granulation in the wound during healing sometimes caused much anxiety. In 11 cases it was detected, at times varying from fifteen days to two months after laryngo-fissure. It appeared on the cicatrizing cord or in the anterior commissure. In 4 cases it was left alone, and took from three to twelve months to disappear. Of the other 7 cases he removed it through the mouth and under cocaine by McKenzie's duck-bill forceps in 5. In one of the remainder it was subglottic in position, and so large that stenosis was threatened, and tracheotomy had to be done. The tube was worn for six weeks, after which time the granuloma had disappeared. In the other a large granulation, the size of a cranberry, appeared in the anterior commissure two months after operation, and proved to be an exostosis. It caused little trouble, and was still present two years after the operation. The patient was 72 years old. Most patients were sitting out of bed and eating solid food on the day following the operation. They suffered no shock and recovered rapidly. The windows were left freely open day and night. The old paraphernalia of screens round the bed, closed windows, and even temperature, steam kettles, and such like, had long been abolished. It had been his custom to keep the patients silent for the first three weeks. They then started whispering, and as soon as a good cicatricial cord had replaced the one removed they were not only

encouraged to speak, but in cases of bad speakers further improvement was secured by sending them to a voice trainer. The voice was always sufficient for the ordinary purposes of life: schoolmasters had been able to continue their profession, and others could make public speeches. But all the patients had not been kept silent for these first three weeks, and he thought that by earlier resumption of vocal use there had been better compensatory results, and not that tendency to contraction which had been observed in two of the most silent cases. He now thought a week's silence was sufficient. If patients applied early with epithelioma limited to a vocal cord the death-rate should be *nil*, the restoration of voice satisfactory, and the cure lasting.

Surgeon-General BIRKETT, C.A.M.C., agreed that fixation of the cord was no invariable sign. All must have seen cases when it was absent.

Mr. WILFRED TROTTER said that his practical experience was confined to conditions extra-laryngeal. He had been removing the ala of the thyroid cartilage for ten years for another reason—namely, to obtain access to the upper part of the larynx, and consequently had removed the ala more completely, including both cornua. He had probably removed the whole ala fifty times, and there was no evidence that it interfered with the recovery of the patient's voice. It was a harmless and very useful procedure. He had never ligatured or clamped the thyroid isthmus, and no evil results had followed. An important reason for dividing the isthmus was that if the tracheotomy tube had to be removed the isthmus could not descend over the opening and hinder its replacement. He had known lives sacrificed in this way by leaving the isthmus intact.

Dr. W. HILL mentioned a case in which fatal haemorrhage had occurred, as evidence of the value of retention of the tracheotomy tube and plugging temporarily, for by this means death might have been avoided.

Mr. HERBERT TILLEY had operated upon twenty-two such cases. He thought that this kind of cancer might form a basis from which some clear ideas might be evolved on the infectivity of the disease. In this respect cases in which growth recurred ten, twelve, or more years after operation were interesting. He doubted whether "recurrence" was the proper term, and queried whether an immunization took place, and that the so-called "recurrence" followed when that immunization wore off.

Mr. IRWIN MOORE advised that the tracheotomy tube should be left *in situ* for a few hours if neither the surgeon nor a dependable substitute were within immediate call. There was particular risk in leaving a patient with no tube after low tracheotomy. The results of operation were so good chiefly because the operation was done early and the diagnosis was established. He hoped for more co-operation with the general physician in cases of persistent hoarseness.

Mr. C. MCMAHON offered the following suggestions for re-education of the voice in these cases:

1. Develop the sterno-thyroid and sterno-hyoid muscles, and keep the larynx low. Use a tongue depressor to help to accomplish the descent of the larynx.
2. Make the patient speak as little as possible until a deep pitch of voice is established.
3. Let the breathing movement be inferior lateral costal, with a small but definite expansion, and let the motive power of the voice be the powerful contraction of the abdominal muscles.
4. When the larynx is established in its low position instruct the patient that voice gets its chief resonance in the head and chest, and that the throat is a conduit pipe between them, and must be entirely unconstricted; and also that free lip movement increases oral resonance. If further vocal treatment is necessary, the resonator positions of vowel sounds and clearness of articulation generally should be taught.

A really useful voice can be anticipated in practically all cases.

MR. RIGBY SWIFT, K.C., at the request of the Minister of Pensions, has become president of the Officers' Appeal Board; the other members of the Board are Dr. Norman Moore, president of the Royal College of Physicians of London; Sir Alfred Pearce Gould, K.C.V.O.; and Captain Albert Smith, M.P. An officer whose claim for retired pay from the Ministry of Pensions has been refused on the ground that his disability is not attributable to, or aggravated by, military service, may ask the Ministry to refer his claim to the Appeal Board, which meets at intervals as the cases to be dealt with require.

THE BRIDGE-HEAD.

BY

SIR ANDREW MACPHAIL.

THE end has come. This Ambulance, which was in Rest at Boolezele,[1] which spent a Wet Night in the forest of Eperlecques,[2] and did a Day's Work on Vimy Ridge,[3] is now in the Cologne Bridge-head at Siegburg, *trans flumen Rhenum*.

This most mobile of all military units has reached the limit of its forward wanderings, and is now at ease in a noble house in a pretty town in a peaceful and pleasant country. With work it has nothing to do. There are a few cases of influenza to be cared for, but the great days are gone for ever. In those two divisions of the Canadian corps, numbering sixty thousand men, there were only eleven deaths during the five weeks of occupation. The medical officers have ample leisure to brood over the past, and compare their present magnificence with the sordid surroundings, the squalid discomfort, and the poignant tragedy of the four preceding years and winters.

This Ambulance mobilized in Montreal, November 14th, 1914. It came overseas in April, 1915, and went to France in the following September. The normal establishment of officers is ten, and of the original personnel only two remain. It has had its losses. The colonel was killed at Courcelette; a captain was killed at Amiens; the quartermaster at Arras. Also, it has had due share of honours. To these officers were awarded four D.S.O.'s, one additional bar, four military crosses, and one knighthood. Of the other ranks one half remains, and one third of the horses are yet in service.

The Rhine was crossed on December 13th. The crossing was a ceremonial, and one who rides in ceremony sees nothing but his horse's ears, save for the moment when he turns "eyes right," and then he sees only the saluting officer. But it must have been to the observers a great show of power. From eight in the morning until four in the afternoon the troops were crossing in columns of route, ten yards between battalions, fifty between brigades. The troops marched without open enthusiasm, without emotion, void of passion, with no sign of imagination, without any apparent pride, but with the slow relentlessness of a glacier, with the inevitable power of a geological movement, file after file of fours with bayonets fixed, wagon after wagon, gun after gun, lorry after lorry—no haste, no confusion, no halts. Each column passed the saluting point to the minute, every horse and every man in his appointed place: and this after a march of nine days at twenty miles a day with rations none too abundant, for the rail-head was left perilously far behind.

A bridge-head has little to do with a bridge. It is an area as large as an English county. If one point of a compass be placed upon Cologne and the other upon Bonn, which is twenty miles to the south, and the compass be turned eastward in a great half-circle and back to the river again at the north, the line will fall far within the broken hills which border the Rhine valley. The line itself follows a good contour, and a commanding position is not sacrificed to topographical exactness. The army believes in a margin of safety.

The bridge-head is a country of wood, copse, orchard, farm, heath, dry and wet meadows, fern, moor, moss, and water flowing in rivers, rushing in streams, still in pools or stagnant in the ditches. The main roads are paved with stone or cement blocks.

[1] BRITISH MEDICAL JOURNAL, September 1st, 1917.
[2] BRITISH MEDICAL JOURNAL, December 7th, 1918.
[3] *Lancet*, June 30th, 1917.

Other roads are well metalled, or made from the soil, but good. Then there are farm roads from which one can walk up the hills by bridle-paths.

The spectacle of real interest in the bridge-head is the Germans themselves. It seems incredible that one can see enough of them. For four years they were as elusive as ground-hogs; and the belief grew that there were none, that they had all gone home; but this belief could be quickly dispelled by lifting one's head above the parapet. An occasional prisoner, and on certain days of the year whole companies marching down, that was all one saw of the Germans; but here one may stand all day to the eye's content. They throng the streets, stream across the bridges, and inhabit the villages; but it is in the opera house at Cologne they are seen in their native haunt.

In the mass the Prussian is singularly true to type. As they sit in rows they are all the same, with sloping shoulders, hard, lean, implacable faces, dull as Mongolians, and without much head behind their ears. At regular intervals in the rows the face of a Jew looks intimate and almost friendly. They are all dressed in black, and the absence of colour from the women's garb gives an impression of melancholy and gloom. The women look like overgrown girls, their dress conventional, but short at the bottom and short at the top. The eyes of men and women alike are holden from seeing us. We are to them as ghosts and shadows. Their mien is one of cold neutrality. They do not stare, and they do not turn aside. Never before was witnessed so strict and formal a politeness; but a world without a smile is a cheerless world.

The opera is done with full pomp, and the house is always crowded. The performance begins at such an hour as will bring it to an end before eight, as civilians must be in their homes by nine. The hour was originally seven, but that interfered with business. One might wish to buy something, and the time was changed for our own convenience. For the first day or two it was a rule that officers must be saluted by civilians; but returning the salutes became so irksome that the practice was abolished.

The Germans think we do the occupation business very badly. Their method in Belgium and France was in their eyes the proper way. They are disappointed. Even a photographer who is engaged to make a group of officers will demonstrate to them in his own person what they should do to make themselves look fierce and haughty. They do not understand that a soldier may be pleasant yet implacable, victorious without arrogance, at once merciful and just. The English are frightfully righteous, they say. They ask the meaning of it, and the only answer is that the English make war upon armies, not upon civilians, not upon women and children.

For the benefit of those who are to write the history of the war let it be recorded that Cologne was first occupied by a Canadian subaltern of sappers. This young officer was returning from leave. At various times for four years he had been returning from leave, and the ethics of the return is to arrive at the front without delay. But in the meantime the corps may have moved to a new area. It is the business of the Railway Transport Officer to direct inquirers to their units; but the R.T.O. is the last man in the army to know where a unit is at any given moment. The *permissionnaire* turns his face eastward and takes to the road. He enters any train that appears to be going in that direction, and completes the journey in a chance lorry, mess-cart, or ambulance.

For four years there was a fair degree of certainty that the conveyance would not go too far. The German line from the sea to Switzerland was an effective barrier. At one station this sapper officer saw a train heading in the right direction. It appeared to be commodious and he went on board. It turned out to be the armistice train, and it deposited him in Cologne. He could have gone to Berlin, but his immediate concern was to rejoin his unit. When the train proceeded he was the only British officer in Cologne. In this strange circumstance he did the obvious thing. He went to an hotel, engaged a room, and having taken possession waited until his unit arrived for his support.

The spell of the Rhine has fallen upon the troops. The river is of the proper size and speed. It is unmistakably a river and not a lake. By day its surface is yellow and finely wrinkled like the face of a slow, sad old man; by night like burnished metal it gives back the lights in shafts of red, yellow, and silver. Soldiers cross and recross. The New Zealander is there; but it is not the ruins of St. Paul's he regards. It is the Hohenzollern bridge he stands upon, a contraption of towers, turrets, battlements, and embrasures, like a thing upon the German stage. He considers the four equestrian statues, two at each end, beautifully weathered, but he finds something comical in the bronze truculence of tail, and mane, and plume. In the western background are ever the twin towers of the cathedral like saw-toothed bayonets. A sapper, who in virtue of his craft has an eye for wide impressions, found in this edifice a resemblance to an enormous man with shaggy head and hairy chest, and powerful arms, but with no loins nor legs nor guts; and he contrasted it with the church at Amiens with its single spire, which, as he said, arose like a rod of spikenard in the wilderness.

Below the bridges the barges pass, and one still bears upon its prow a miniature Christmas tree. Down stream the bridge of boats is open so that the current may have free way; for the river is in flood, and a boy is poling an improvised raft in the overflown waters. Up stream the New Bridge stretches its three delicate spans across—a frank structure such as any rational people might build. A single aeroplane patrols slowly up and down the river: that is the only sign that a state of war still exists.

In Cologne it is even more like the old tourist days, and the music shop of P. J. Tonger is doing its usual business. The place was comfortably filled with men, women, and a few officers, buying the scores of the opera; and they were as solemn as if buying a piece of music were a sacrament. The shop is like the library of a college, the alcoves adorned with the traditional busts. A woman was in doubt about the music she wanted, and the assistant hummed the various tunes to her. He wore a G clef in gold as a scarf-pin. He sold the scores of "Tannhauser," "Lohengrin," "The Flying Dutchman," "Mignon," and "Carmen" at four to six marks apiece. Had he Charpentier's "Paris"? He missed the irony of the request. "I will ask my colleague," he said. Had he "Parsifal"? "I should hope so," he protested with a fervour that was almost religious.

The army is disturbed. It is the children who disturb them. Wherever one dismounts a crowd assembles, singularly devoid of beauty, as nervous as wild animals, pale to yellowness, with dull, apathetic faces; without a trace of colour in any cheek. One child was eating a piece of disgusting, black, sodden bread. A boy showed an unhealed wound following an operation for hare-lip, more repellent than the original deformity. One of the more forward asked in a negative way for chocolate—*nicht Schokolade?*—and his companions were alarmed at his boldness.

On Christmas Day we made our first visit to the outposts. The journey began at Deutz, which is across the river from Cologne, and ended at Lindlar,

a good twenty miles into the north-eastern hills. The route lay by Ostheim, Heumar, Rosrath, Imme-Keppel, Hoch-Keppel, and Vellingen, at first squalid villages and then hamlets of scattered houses. Once clear of the town the road enters a planted forest of oak, spruce, fir, elm, pine—all laid out like a town. The plantings of each year could be distinguished, and they ranged from a foot in height to well grown trees fit at least for the timbering of mines.

Once through the forest the Agger was seen tumbling down from the hills, and a branch of the main stream served as an upward guide. Snow lay upon the ground as we rose, but in the river bottom on the right the grass was green along the narrow ditches that drained the land. Groups of people, mostly old women, young women, children, and old men, all in decent black, were on the way from church, following paths across the hills, and they would reply cheerfully to a "Merry Christmas." Although there is a rule against "fraternizing," there was no harm in saying that much.

After travelling 25 miles in a north-easterly direction we came to a sign which indicated that we had reached the limits of the bridge-head. There was a fire of sticks in the road. A few ground-sheets spread over a frame formed a shelter. Two boys were standing by with their hands in their greatcoat pockets. They looked very cheerless. One was tall; the other was short; he had a cast in his eye. His name was Cooper. This was the army of occupation; at least, this was all we saw. But we knew, and the Germans knew, that men and guns beyond belief were concealed in farms in the folds of the hills. We passed on into the neutral zone which extends 10 kilometres further, and turned about at Lindlar. Civilians were going and coming, unheeded by the sentries. Although they allowed that they would stop any "suspicious characters," they did not explain the grounds on which they would "suspect" a person.

On the return journey we stopped and smoked a cigarette in a little wood on the hillside. It was free of snow, and the red needles of the fir lay clean upon the ground as in the woods at Orwell where "Gipsy" lies buried. In other places we walked on moss deep to one's spurs. A few woodmen were at work, and women were carrying off branches for their warmth. A thin blue smoke went up from a clearing. Logs were piled with scrupulous exactness against the needs of war. Something happened. There let them lie. It was all like regarding the work of men who are already dead.

At Imme-Keppel we called at a roadside house for rest and warmth. There was a commodious room on the right of the hall. It contained a table, a bench, a few chairs, and an open cupboard with glasses and bottles. On the wall were homely pictures—an old woman sitting in a high chair with a soldier kneeling to receive her blessing; a placid river; and a Christmas scene with the legend, "Come, Herr Jesus, and sit with us." We warmed ourselves, had a hot drink, which the woman called coffee, and a glass of "alcohol-free" stuff with a neighbour who came in.

This man had been on the Russian front far east of Riga, and we had much talk with him. He had a way of saying "Yes," which meant, "Yes, we made a mistake. We were led astray. But there it is. What is to be done? I do not know. See what you can do to clear away the mess." Also, he was sorry for us. He was done with war. We were far from our homes. Our job was not finished. We were "sent." We could do no otherwise. The sum of his reasoning was: In Russia there are good people and bad people; in England there are good people and bad people; in Germany there are good people and bad people.

The goat in the Greek verse gnawed the vine to the root; but the vine was quite sure it would yield grapes for wine to be used when the goat lay dead on the altar. The British Empire is that vine, and the German is the goat. He is shattered for ever. He is a dispersed people. The dispersion began even before the war: that is the meaning of his penetration into other lands. His empire was a fabricated thing made by hands as by one who thought to add a cubit to his stature. The fabric has come to the ground and can never be rebuilt. The German must have a mechanism for everything, and his machine has broken down. In that is the history of Germany, and the meaning of the war.

If he would draw a curtain, he must have a string and pulley. If he would lift his blind, he must have a crank and a cogged wheel. In the mess-room of this house is a peristyle against the wall like a mantelpiece. It conceals a radiator. On the floor is a grate filled with pieces of wood nailed together. Below this wood are electric lights covered with red paper, and underneath the grate is a piece of metal to protect the floor from the imaginary heat. There is also a sheet of stamped bronze to conduct the smoke that has no existence. The contraption is to him a fireplace, and to his mind it is much better, more "efficient," than the English fireplace, which is made of stone, and burns fuel directly. He built of wood, hay, straw, stubble, and thought it stone. The world to him was a stage, and the false was the true. His whole fabric was a tower of Babel; his stones brick, slime for mortar. The Germans now look upon us not as masters, but as saviours from themselves.

January 7th, 1919. A train left Cologne at 5 a.m., and at sunrise I awoke, the sun looking as it looked in Flanders, shining through the yellow mist across the level plain. Past Eschwielorhof the country became sparse and rough. White birches and young pines grew above the ledges of rock. After Aachen a tunnel with flaring lights; then red hills, and smoky clouds in a pale blue sky; houses on the short hillsides. Hergenrath at 9.30; a wide horizon upon the hills: woods broken by red quarry faces; brawling streams; red roofs, white spires, and square towers; a difficult country; one sees why the Germans preferred Belgium for their march. The journey brought us past Herbersthal, Verviers, Ensival, Papinster, Gafontaine, Nessonvaux, Trooz, Heime, leaving Liége some miles to the north. Through low hills and green valleys; at Ensival a river, probably the Vesdre, was crossed; then the Meuse was reached. From Huy to Namur the train followed this noble river up a rich, green valley with bold cliffs on either hand, showing tilted benches of rock. A man was ploughing with oxen, and the meadows were white with sheep. Namur was reached at 3.30; then we followed the pretty Sambre, a gentle stream, until the valley widened out to a pleasant countryside. Charleroi was reached at 7.30, and we had dinner in the canteen, a gross affair.

January 8th, 1919. Awoke upon a sunless day. A windmill was in sight. We must be east of Mons or west of Arras. We were at Somain near Douai. We had made little progress in the night, and were now due at Boulogne. Soon we came into the area of roofless houses and blown bridges. There was the usual acrid smell in the air. The shell holes are quite grown with grass, but no single point arises in the desolation. It is all a shambles, a slaughter-house, squalid as a shack wherein murder had been done. In the course of the day we passed the towers of Mount St. Eloi, which are against Vimy Ridge, and I looked upon a battlefield for the last time.

British Medical Association.

CLINICAL MEETING, APRIL 8th to 11th, 1919.

THE arrangements for the special clinical meeting of the British Medical Association in April next are sufficiently advanced to warrant the publication of the provisional programme printed below.

The meetings of the sections will be held in the Imperial College of Science at South Kensington, the unrivalled resources of this great institution having been placed with great good-will at the disposal of the Association for the purpose by Sir Alfred Keogh, G.C.B., M.D., the Rector.

Further particulars with regard to the business of the sections and the general affairs of the meeting, including certain evening entertainments, will be published at an early date.

PROVISIONAL PROGRAMME.

SECTION OF MEDICINE.

Wednesday, April 9th.—10 a.m. to 1 p.m.

War Neuroses.—Chairman: Colonel H. MAUDSLEY, C.M.G., C.B.E., F.R.C.P., A.A.M.C. Introducer: Lieut.-Colonel F. W. MOTT, F.R.S., R.A.M.C. A discussion will follow.

Thursday, April 10th.—10 a.m. to 1 p.m.

Influenza.—(In conjunction with the Section of Preventive Medicine and Pathology.) The subject will be treated under the following headings:

1. Clinical Aspects.
   (*a*) Short account of epidemics of 1918 in France. Contrast between clinical features of spring and autumn epidemics—for example, respiratory complications.
   (*b*) Epidemic in England. Contrasts and resemblances to above.
2. Epidemiology.
3. Etiology.

N.B.—The pathological aspects will be treated by means of demonstrations.

Friday, April 11th.—10 a.m. to 11.30 a.m.

Venereal Disease.—Chairman: Sir WILLIAM OSLER, Bt. The subject will be introduced by Brevet Colonel L. W. HARRISON, D.S.O., K.H.P., Lecturer in Venereal Diseases, Military Hospital, Rochester Row. A discussion will follow.

11.30 a.m. to 1 p.m.

Prognosis in Cardio-vascular Affections.—Chairman: Sir JAMES MACKENZIE, M.D., F.R.S. Introducer: Dr. THOMAS LEWIS, F.R.S. A discussion will follow.

DEMONSTRATIONS.

It is hoped that the following demonstrations may be arranged to take place in the afternoon beginning at 2.30:

Wednesday, April 9th.

Interesting Neurological Cases. National Hospital for Paralysed and Epileptic, Queen Square.
Diseases of the Chest. Brompton Hospital.
Mine Gas Poisoning. Lieut.-Colonel D. Dale Logan, D.S.O., R.A.M.C.

Thursday, April 10th.

Newer Methods in Cardio-diagnosis. National Heart Hospital, Westmoreland Street.
Air Force Tests.
Cases and Specimens (Cardiac). Dr. Thomas Lewis, F.R.S., at University College Hospital.

Friday, April 11th.

Venereal Diseases. Lieut.-Colonel L. W. Harrison, D.S.O., Military Hospital, Rochester Row.
War Neuroses. Lieut.-Colonel F. W. Mott, F.R.S., Maudsley Clearing Hospital, Denmark Hill.
Diseases of Children. Hospital for Sick Children, Great Ormond Street.

It is probable that other demonstrations will be arranged and that some of the above will take place on more than one afternoon.

SECTION OF SURGERY.

Discussions on the following subjects have been arranged to take place in the morning of the day indicated.

Wednesday, April 9th.

Gunshot Wounds of the Chest.—Introducers: Colonel T. R. ELLIOTT, D.S.O., and Colonel G. E. GASK, C.M.G., D.S.O.

Thursday, April 10th.

Wound Shock.—Introducers: Professor W. M. BAYLISS, F.R.S., and Dr. H. H. DALE, F.R.S.

Friday, April 11th.

Reconstructive Surgery.—Introducer: Major R. C. ELMSLIE.

DEMONSTRATIONS.

The following demonstrations have been arranged to take place in the afternoon:

Wednesday, April 9th.

1. On Orthopaedic Methods, etc.; at the Military (Orthopaedic) Hospital, Shepherd's Bush.
2. Specimens illustrating Wounds of Arteries; at the Royal College of Surgeons.
3. On *X* Rays.

Thursday, April 10th.

1. On Facial Injuries; at Sidcup.
2. On Injuries of the Eye.
3. Specimens illustrating Fractures of the Skull; at the Royal College of Surgeons.

Friday, April 11th.

1. On Orthopaedic Methods, etc.; at the Military (Orthopaedic) Hospital, Shepherd's Bush.
2. Specimens illustrating Gunshot Wounds of the Abdomen; at the Royal College of Surgeons.
3. On *X* Rays.

SECTION OF PREVENTIVE MEDICINE AND PATHOLOGY.

Discussions have been arranged for the morning meetings on the following subjects:

Wednesday, April 9th.—10 a.m. to 1 p.m.

The Dysenteries: Bacillary and Amoebic.—Introduced by Lieut.-Colonel L. DUDGEON, C.M.G.

Thursday, April 10th.—10 a.m. to 1 p.m.

Influenza.—(At a joint meeting with the Section of Medicine, *q.v.*) Epidemiology: Introduced by Captain M. GREENWOOD, R.A.M.C. Etiology: Introduced by Major BOWMAN, C.A.M.C.

Friday, April 11th.—10 a.m. to 1 p.m.

Malaria.

DEMONSTRATIONS.

Demonstrations have been arranged to take place in the afternoon of each day as follows:

Wednesday, April 9th.—On Malaria.
Thursday, April 10th.—On the Pathology of Dysentery; at St. Thomas's Hospital.
Friday, April 11th.—On the Anaërobic Bacteria which infect Wounds; and On the subject of Filter-passing Viruses in Influenza and other Diseases, and Rickettsia Bodies. At the Lister Institute of Preventive Medicine.

THE WAR COLLECTION AT THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

The collection of pathological specimens from the seat of war in France will be on view daily from 10 till 6 (on Saturday 10 till 1) at the Royal College of Surgeons, Lincoln's Inn Fields, W.C.

The collection comprises a large and complete series of gunshot fractures of the bones; and another series, equally complete, of gunshot injuries of the different organs and soft structures, as well as specimens of disease incident to warfare, the effects of gassing, trench nephritis, gas gangrene, etc. The entire collection is systematically arranged, and each preparation is furnished with a brief description and history. So far, three demonstrations have been arranged. Each will occupy about one hour, and will be given from 3.30 till 4.30.

Wednesday.—Sir George Makins: Injuries of Arteries.
Thursday.—Professor Arthur Keith, F.R.S.: Fractures of the Skull.
Friday.—Mr. C. S. Wallace, C.B.: Abdominal Injuries.

British Medical Journal.

SATURDAY, FEBRUARY 15TH, 1919.

THE TEACHING OF OBSTETRICS AND GYNAECOLOGY.

THERE is no part of medical education in which the public welfare is more largely or more vitally concerned than the teaching of obstetrics, and the discussion on this subject which took place at the Royal Society of Medicine last week is of more than merely professional interest. The title of the discussion, "On reconstruction in the teaching of obstetrics and gynaecology to the medical student," may be regarded as an indication that the attempt to divorce in teaching these two essentially related subjects has failed. Where the separation has been effected, the experiment has not been justified in the results. More than one reference was made in the discussion to this point, and the sense of the meeting was definitely and emphatically against separation.

In the present stage of the evolution of medicine, and in view of the increase of enlightened public interest, it was not unnatural to find that the preventive aspects of obstetrical and gynaecological teaching bulked largely in the minds of the speakers. A lead along this line of discussion was ably given by Dr. J. S. Fairbairn, whose ideal is the association in one teaching hospital unit of a complete maternity centre, a complete gynaecological centre, and a child welfare centre. Such an arrangement would undoubtedly enable the student to gain a comprehensive view of his future responsibilities and to study in a natural sequence the diseases of pregnancy, the complications of labour, the gynaecological results of childbirth, and the affections of infancy. Furthermore, if the student were made to feel that during his attendance he was an integral part of such a social welfare unit, the community would subsequently gain by the quickening of his sense of medical citizenship.

We are not prepared to follow Dr. Fairbairn in his suggestion that the care of the infant up to nine months or a year might advantageously be the province of the obstetrician. While there is everything to be said for an unbroken sequence in the teaching of obstetrics and pediatrics, the argument for the teaching of the two subjects by the same teachers is by no means so strong. Theoretically the infant should be the charge of the pediatrician from its birth. If it be impracticable to draw the dividing line at this logical point it seems better to adhere to the established practice by which the infant passes from the obstetrician's care at the end of the mother's puerperium.

The advantages which have already followed, and which will follow in increasing measure, the efforts to improve the care and supervision of the expectant mother are so obvious that no dissentient opinion was to be looked for in a learned society. It was therefore somewhat surprising to find Dr. Lovell Drage stating that "there is no reason to suppose that the supervision of pregnant mothers will produce any other result than that of raising up to maturity more unfit adults." This opinion was combated by the speakers during the discussion, and it seems almost superfluous to point out some of the considerations which render the statement fallacious. We may take, as an example, the hundreds of perfectly healthy babies that are annually sacrificed by craniotomy owing to the lack of foreknowledge of a narrow pelvis; or the thousands of preventable abortions and miscarriages that occur from causes which are in no way calculated to affect the healthiness of the fetus. Even in toxaemic conditions in pregnancy there is no ground to suppose that the child of a woman with albuminuria, who by careful treatment during her pregnancy is steered past the perils of eclampsia, is bound to grow up "unfit"; nor even need the offspring of a woman who has had syphilis and been adequately treated by modern methods prove to be a physical degenerate. Far from decrying the value of the care of the expectant mother, we believe that to just the degree in which it is carefully and conscientiously effected, so will sacrificial operations be consigned to limbo, and eclampsia become a disease almost, though never absolutely, unknown.

In regard to the actual methods of teaching, the particular difficulties of the London schools were naturally in the minds of most speakers, just as the special difficulties of the Edinburgh school were in the middle foreground in the discussion of the same subject at the Edinburgh Pathological Club.[1] The really crucial points are, however, applicable to all schools. In approaching the question it is well to keep clearly in mind how obstetrics differs from medicine and ordinary surgery. Putting aside major operative surgery as in the main outside the province of the general practitioner, it is in the practice of obstetrics above all that the doctor is brought into daily, intimate conflict with conditions in which a mistake has to be paid for by lives—two lives, possibly, for one mistake, and the payment often is demanded on the spot. Increased attention to the pregnant woman will certainly diminish the frequency of unexpected obstetrical emergencies, but not all the care in the world can prevent the occurrence of, for example, adherent placenta or placenta praevia. Professor Briggs's article, which appears at p. 179, is a timely illustration of this very point, as well as of the benefits derived from prompt treatment of the expectant mother.

From such considerations one or two conclusions, almost axiomatic, may fairly be drawn. In the first place, the subject is so vital that the teaching of obstetrics must not be crammed into a few lectures and reduced to the level of a minor specialty. Together with gynaecology, a six months' course, suitably divided into systematic, clinical, and practical work, is not a day too much. In the second place, it is so essential that the graduate should have a practical knowledge of midwifery, and have that knowledge at his finger-tips in every sense of the expression, that more attention and more supervision must be given to the clinical and practical parts of the teaching than hitherto. It was manifest from the discussion that in London the teaching is left too much to junior members of the staff, the seniors being greatly occupied by operative gynaecology and the claims of private practice. In the provinces this difficulty and source of weakness may not be so apparent. It was only to be expected that the obvious remedy of whole-time teachers should be proposed, but the value of this proposal is open to question. In the first place, the emoluments to be offered to a whole-time teacher of midwifery would have to be very generous if the right stamp of man is to be attracted to such a career. Secondly, there would be a danger of such a teacher losing touch with the conditions of practice. During the war some of our

[1] *Edinburgh Medical Journal*, November, 1918.

older generals were removed from the control of the home training of the armies because they were not in personal touch with the conditions of warfare as waged by the German. Surely that is an object lesson. Those officers were presumably masters of the general principles of warfare, but they were unfamiliar with the particular conditions of the war.

Stress was rightly laid during the discussion on the fact that a teaching department in obstetrics and gynaecology which is not also a centre of research work is to all intents without a soul. This is a cardinal truth, and one that makes the suggestion of whole-time teachers more seductive. But it is not necessary for the head of the department to spend many hours daily in his laboratory in order to make it a centre of research. The spade work ought to be done by the junior members of the staff; the function of the chief would be to inspire and suggest and guide.

But, when all is said and done, the better teaching of the medical student is only part of the problem to be faced. A larger and hardly less important part is the better education and control of midwives—a subject with which the Ministry of Health, of blessed expectations, must grapple. If it fail to do so, it will prove to be the only too legitimate offspring of the Local Government Board. And lastly, there is the general public to be educated, along the lines indicated by Mr. Victor Bonney, to a better appreciation of the essentially surgical nature of all consistently safe and successful midwifery.

THE FUNCTION OF THE ADRENAL CORTEX.

An article on the influence of the adrenal bodies upon the genital system, written by Dr. Swale Vincent, Professor of Physiology in the University of Manitoba, for a discussion at the American Gynaecological Society eighteen months ago, has recently been reprinted.[1] It contains an interesting summary of the facts of comparative anatomy bearing upon the functions of the adrenal body. Dr. Vincent illustrates by diagrams the fact that the medulla and cortex belong to two different systems, and that their association in the adrenal body is, so to say, an anatomical accident. The medullary substance is an accumulation of the chromaphil tissue which has arisen from the sympathetic in certain abdominal segments and has insinuated itself into the adrenal body proper, that is, into what is usually called the cortex.

The adrenal cortex is developed from the germ epithelium, as are also the accessory cortical adrenals which occur so commonly in many animals as to compel us to regard the cortex as part of a system. His contention is, therefore, that it would be wise for investigators to search for a separate function for each of the two systems, cortex and medulla; there is already evidence strongly favouring the view that the cortex has certain important functions in connexion with the development and growth of the sex organs. There is also abundant experimental evidence that it is the cortex, and not the medulla, which is essential to life. Extracts of the cortex do not contain any very special physiological principle. It is true that when injected into the veins of a living animal they lower the blood pressure, but this action is common to extracts made from all organs and tissues. The nature of the substance producing this effect is not certainly known; it is not choline, but it is possible that it may be betaiminazolylethylamine.

The cortical cells contain numerous lipoid granules, the so-called cortical granules; their function is not known, but it may be that they are to be regarded as secretions about to be poured into the blood stream. The function of the adrenal cortex has not been ascertained, but there is good clinical evidence that it is related to growth and development, especially of the sexual organs. Bulloch and Sequeira reported in 1905 that tumours or hypertrophies of the adrenal body were sometimes associated with precocious development of the reproductive organs.

Vincent adopts Glynn's classification of the tumours and rests of the adrenal cortex. The main divisions are into (*a*) diffuse hyperplasia passing into adenomata, frequently associated with female pseudohermaphroditism, and (*b*) malignant tumours, either sarcomata or hypernephromata or mesotheliomata. Hypernephromata of the adrenal body in children is much commoner in females than in males, and tends to increase the male primary and secondary characters at the expense of the female. Enlargement of the adrenal bodies occurs in some animals in the breeding season and in pregnancy, and Glynn has found some evidence of enlargement in pregnant women. Some experiments in which small doses of the gland substance were given to white rats in their food seemed to show that enlargement of the ovaries or testes, as the case might be, occurred; but the evidence on this head is incomplete. Vincent admits that it is hopeless at present to attempt any explanation of the precise manner or the essential mechanism of the influence of the adrenal cortex upon the reproductive organs. The adrenal organs may secrete a hormone which passes into the blood stream and so reaches the reproductive organs; or there may be more than one hormone. It is, he thinks, possible that the simple physiological conception of underaction or overaction of the various ductless glands, now held to account for the various pathological states observed, may have to be supplemented or superseded by a consideration of modified or deranged function.

The paper by Colonel McCarrison, I.M.S. (published at p. 177), contains a striking observation on concurrent hypertrophy of the adrenals and atrophy of the reproductive organs. It was made in the course of an elaborate and laborious investigation on the pathogenesis of disease due to deficiency of certain accessory food factors. In experiments on pigeons he found that the absence of these factors from the diet led to atrophy of all organs and tissues except the adrenals, and that the atrophy of the testes was extraordinarily great. The average weight of the testes per kilo of body weight in healthy adult pigeons was 4.643 grams, but in those receiving a diet from which accessory food factors were absent it was only 0.4015 gram. In the same animals the average weight of the adrenal bodies was 100.3 mg. and 139.5 mg. respectively. The atrophy of the central nervous system was slight. This, as is well known, is what occurs in inanition. McCarrison finds that in inanition there is also hypertrophy of the adrenals, but atrophy of other organs, the brain excepted. The change in the adrenal bodies seems to be a true hypertrophy, as there is a proportional increase in the adrenalin content.

There are other points in McCarrison's conclusions from his experiments which will appeal to thoughtful members of the profession, especially those who take an interest in the nutrition of children; his observation that deficiency of certain accessory food factors opens the door to infections and parasitic agents may prove of far-reaching importance.

[1] From *Surgery, Gynecology, and Obstetrics*, vol. xxv, p. 294.

THE INDIAN MEDICAL SERVICE.

THE history of the Indian Medical Service in the last twenty years has been one of decline from the position of the finest and most attractive medical service under the Crown to a state of things which drove its ablest and keenest members to despair of its future and to advise young medical men not to enter it. There were many causes, but the root cause was the failure of those responsible for the good government of India to understand the importance to it of a medical service enjoying conditions which would attract men highly skilled in clinical and experimental medicine to enter it and make them contented during their service. The British Medical Association, which has always taken a deep interest in the welfare of the Indian Medical Service, shortly before the war took up the matter again strenuously and presented memorandums pointing out the causes of the unpopularity and unhappiness of the service, and suggesting remedies. It found in Mr. Austen Chamberlain, then Secretary of State for India, a statesman who had always shown a wise understanding of the importance of medicine to the State, and who gave practical proof of his anxiety to be helped by expert advice. He was succeeded by Mr. Montagu, to whom the representations already made were repeated. His reply to the deputation the Association sent to him last June showed that he himself had come to a very clear opinion as to the nature of the existing defects and as to the remedies necessary. He promised to use his influence and authority with the Indian Council and the Government of India to ensure the early introduction of the necessary reforms. He has amply fulfilled this promise. In the statement he made to the deputation from the Association which waited upon him again last Monday he was able to announce certain very important alterations, which we trust and believe will achieve the object the Association has sought to attain, and which Mr. Montagu has shown is very near to his own heart. As will be seen from the report of the proceedings of the deputation published in the SUPPLEMENT, the Secretary of State for India in Council has sanctioned a substantial increase (33⅓ per cent.) on the present rates of grade pay on both the military and civil sides of the Indian Medical Service. He promised that, the war having ended, the leave reserve will be increased to the extent necessary to secure adequate leave for the service generally, including ordinary leave and study leave. He expressed his opinion that it was to the interest of the Indian public that the Indian Medical Service should benefit to the fullest extent by the opportunity of private practice, and he assured the deputation that there was not any prospect that the facilities for private practice the service enjoyed in the past will be diminished. The Association had been encouraged to persevere in its efforts for the extension of medical research in India by the foundation of the Indian Research Fund Association, to which the Government of India makes an annual grant of about £37,000. The war necessarily interfered with the plans the Fund had formed for research, but Mr. Montagu said that a special committee had been appointed in India and that he expected its report to be in his hands very shortly. The Association had always held that the relation in which the Director General I.M.S. stands to the Government of India, and the Surgeon-General of a province to the Provincial Government was unsatisfactory. Mr. Montagu, while expressing his concurrence with the views of the Association, was unable to make any definite promise, but he indicated that a solution of the matter would be involved in the reorganization of the Indian Medical Service which is now under investigation. We believe, however, that what has already been done will greatly increase the attractions of the service and conduce to contentment within it. The hearty thanks not only of the Indian Medical Service and of the British Medical Association, but of the whole medical profession, are due to Mr. Montagu for the time and care he has given to the investigation of the conditions, at home and in India, on which the efficiency and happiness of the Indian Medical Service depend. He has shown a sympathetic understanding of the problem and has sought a solution in the spirit of a statesman who can take a broad view of the necessities of the situation and can act strongly when he is convinced of the necessity and justice of action.

THE POSSIBILITY OF A RECRUDESCENCE OF EPIDEMIC INFLUENZA.

SOME prominence has been given in the press to the recrudescence of influenza in Italy, and on February 12th mention was made of an enhanced prevalence in Huddersfield. The mortality returns of the great towns do not afford any important indications of recrudescence, but mortality figures naturally lag behind incidence rates which are not available for the bulk of the population. An examination of certain incidence records suggests, although the evidence is not quite sufficient to warrant any confident prediction, that a third epidemic may be gathering force. The past history of the disease would lead us to expect that a third wave although not an inevitable is a probable phenomenon. The usual tendency of epidemic diseases, in which pneumonic symptoms are either primary or important secondary phenomena, to develop at or about the periods of seasonal change (illustrated by the old classification of epidemics into vernal and autumnal types) is to be remembered in view of the drastic change of weather conditions we have just experienced. If a new epidemic develops, our predictions as to its severity will depend upon the opinion we hold as to the immunizing value of a previous attack, and the influence of general conditions of health upon resistance. Respecting the former point, no adequate data have yet been published, although some material we have examined suggests that the proportion of those attacked in the autumn epidemic who had fallen victims in the summer was much smaller than to be anticipated as a matter of chance. Similarly the influence of general physique is divergently interpreted; one writer, Fischer,[1] apparently taking it as proved that the most vigorous persons die at the highest rate of influenzal mixed infections, propounds a bacteriological explanation. Those who are responsible for the organization of epidemiological inquiries are fully alive to the possibilities of the situation, and we understand that collective researches upon the influence of previous attacks have already been begun. Much attention has also been directed to the possibility of lessening the attack rate by the use of respirators in view of the alleged success of this method in cutting short an attack in an American city and on American transports. A comparison of the mortality curves of cities with and without a widespread utilization of respirators does not bear out the high claims made on behalf of this method of prophylaxis. The present state of knowledge offers no immediate hope of introducing any simple measure of effective prophylaxis, and attention must continue to be given to the ordinary rules of general hygiene. It is, however, gratifying to know that the problem of influenza is now being handled upon sound epidemiological lines and that researches which the pressure of war work and other obstacles had impeded are now in progress. Epidemiological advances are not secured by "stunts," but through the harmonious and steady co-operation of various types of mind.

THE FUTURE OF WESTMINSTER HOSPITAL.

THE proposal for the amalgamation of Westminster Hospital with King's College Hospital, to which we referred at length six months ago, is coming up again,

[1] *Muench. med. Woch.*, 1918, lxv, 1284.

and the matter is, we understand, to be discussed and probably decided at a meeting of the Board of Governors of the Westminster Hospital on Tuesday next. The meeting has been summoned at the request of the medical staff, and we hope that the governors will come to a wise decision. The decision to remove Westminster Hospital from its present site is approved by both sides; difference of opinion arises when it comes to the question of the future place of work. The plan originally suggested by the late chairman, Sir John Wolfe Barrie, was to build a hospital of 308 beds on the verge of Clapham Common. A hospital of this size is neither economical for a general hospital nor adequate for the needs of a medical school. The supporters of the scheme have had to admit that in view of the increased cost of building, the erection and equipment of a hospital there would absorb not only the whole of the money resulting from the sale of the present site, but also the whole of the available capital. It was estimated before the war that the maintenance of a hospital at Clapham would involve an additional annual expenditure of £8,500 over and above the present expenditure of £25,000 a year, and it is certain that this estimate for maintenance must now be very greatly increased. Further, it is to be remembered that it is more than doubtful whether any large proportion of the present income from subscribers in the Westminster district would be continued. This is the financial aspect of the matter; but there is another of even greater importance, upon which a medical journal may properly express an opinion. If the hospital is removed to Clapham we foresee that it will cease to be a medical school, for there will not be means available to make provision for the special departments essential for teaching in addition to the provision for general medicine and surgery. The association of a school with a hospital is good for both; physicians and surgeons of teaching rank are attracted to it and are kept on their mettle, and thus the patients benefit and the public are the gainers directly and indirectly. The proposal of the medical staff is that the Westminster Hospital should be amalgamated with King's College Hospital at Denmark Hill; that hospital possesses 565 beds, but its financial position is such that it is unable to keep more than a small proportion of them open. We believe, in fact, that more than two-thirds are closed. If the amalgamation takes place, instead of a struggling general hospital at Clapham, which could never be a complete teaching hospital, the vacant beds at King's College Hospital could be immediately put into working order with adequate financial resources, and the number could easily be increased to 600 or 700 by completing the present building. The chairman of King's College Hospital has stated, that it is ready for such an amalgamation, the medical staff of Westminster Hospital is absolutely unanimous in its favour, and King Edward's Hospital Fund for London has stated definitely that it is prepared to consider on its merits any scheme, whether for amalgamation or for an independent hospital, which is approved by the governors. The whole subject of medical education is now under review. The public now understands better than ever before that it is essential to the welfare of the community that medical education in this country should be of the very highest type. London has been slow in realizing we are in a new era; one of the defects of the system has been the diffusion of energy over many of the teaching hospitals. There now occurs an opportunity for an amalgamation which will appeal to supporters of hospitals as a means of financial economy, and to the medical profession and medical teachers as a means of economy in energy and equipment. The responsibility which rests upon the governors of the Westminster Hospital is for all these reasons great, and we venture to hope that they will be guided by the advice of their medical staff to a wise decision.

THE IDEA OF A PROFESSOR.

SIR WILMOT HERRINGHAM has been induced to give his views on medical education in the *St. Bartholomew's Hospital Journal*,* and they are as wise and as piquantly expressed as those familiar with his thought and style will expect. He starts with the proposition that though we in this country have retained to the full our powers of clinical observation and have made notable contributions to neurology, pediatrics, and the study of cardiac diseases, we have not kept pace with other countries in the experimental side of pathology. He asserts, on the one hand, that English physicians have not only treated their own patients with judgement and skill, but have been conscientious in their teaching and successful in infusing these qualities into their students, so that it might almost be said that their lack of the experimental method had been a source of safety. But, on the other hand, he laments that there has thus been fostered a spirit of content with a hand-to-mouth existence, of content to forego that keen desire for discovery which is the soul of science, "even to belittle the laboratory as the regimental officer in his moment of discontent belittles the staff." The growth of physiology, pharmacology, and pathology, he points out, has demanded the expenditure of so much money that none has been left for the scientific needs of the final subjects. The necessary money, let us observe, can only come from Parliament, and there seems now fairly good reason to hope that the Board of Education is able and willing to give the financial help which is necessary if the conception of a hospital unit, in which a professor has assistants, wards, out-patient department, and laboratory properly equipped and officered, is to be realized. The main object of the appointment of a professor, we are told, is that he should devote himself, not to the making of a livelihood by practice, but to teaching and discovery. Sir Wilmot Herringham, while believing that the professor's influence will be felt in several directions, has a clear view of the inevitable limitations of that august official. He does not expect him to give his students the result of a large clinical experience: that must be supplied by the present medical staff of the hospital. Nor would he be able to train students in accurate observation and record of clinical cases any better than they are now, for the staff of a general hospital school has brought teaching to as near perfection in this respect as it is ever likely to reach: this function should continue unimpaired. Four things are to be expected of the professor: first, that by a wide knowledge of science in general and of medical science in particular, he shall be able to throw new light even upon common problems; secondly, that being actively engaged with his assistants in discovery he shall be able to infuse into his students not only the spirit of criticism —that, Sir Wilmot Herringham observes, he can do himself—but the hopeful spirit of inquiry for which contact with discovery at first hand is almost essential. Thirdly, he must not only be a discoverer himself, but should possess the rare gift of inspiring such work in others. Fourthly, he ought, by the quality of his work and by the quantity which, under his guidance, his unit will be able to turn out, to be able to advance medical science in general, and to recover for England that place in it which she has lost. So much for the rosy side; but, Sir Wilmot Herringham continues, "it must not be forgotten that the professor of medicine will not be omniscient. He will not know as much chemistry or physics or bacteriology as the special teachers of those subjects. He will, like the rest of us, be better acquainted with some parts even of medicine than with others. The better man he is the more ready will he be to acknowledge this, and to ask help from his colleagues. He will give, but he will indubitably receive." Finally, we are reminded that it will be difficult in the first place to find a man capable of doing the work a professor ought to do, and in the second to

* February, 1919.

guarantee that he will do it. There are, the essayist shrewdly observes, professors of various subjects in various places, "with no original fitness for the position, and others who, though originally brilliant, have subsided into useless drones." The only precaution he can suggest is a terminable tenure of the appointment. "But," he goes on, "the chief guarantee will always be the character of the man himself, and that is generally ascertainable upon inquiry. At forty a man usually has enough enemies to enable one to obtain a good idea of his vices, and his virtues he can tell for himself."

READING, SEEING, AND DOING.

EDUCATION, like some nebulae, seems to have a spiral movement. Opinion goes off on a wide curve and then bends round again till it comes back almost, but not quite, to the point from which it started. The old idea of education was to teach a child to understand the meaning of things and how they worked; then in this and other countries there came, through the art of reading, a glimpse into a wider world, and presently reading became not merely a useful instrument and a recreation, but, as it were, an end in itself. The higher branches of industry have emancipated themselves from this worship of the means and forgetfulness of the end. The boy, and the girl too, had to be broken of the belief that reading was anything more than a time-saving tool, and, as they are too old to be apprenticed, they are sent after school years to a technical college, there to be taught on sample benches how to work sample machines. This may be the better way; who shall say? But in the elementary schools reading maintained its supremacy, and one good thing about the Education Act of last year was that it provided for "including in the curriculum of public elementary schools at appropriate stages, practical instruction suitable to the ages, abilities, and requirements of the children." The children were to attend technical classes on leaving school, and were to be encouraged to acquire a certain amount of technical language, and knowledge of materials and appliances. It was therefore proposed that during the later part of their school life they should be trained in preliminary technical observations on the school premises. The Royal Sanitary Institute has been giving its attention to these injunctions, and its interpretation of the official sesquipedalianism is instructive, and also a little amusing. What the Institute proposes is that a class of thirty children shall sit round six tables of models, in patrols of five, each with a leader. The patrol leader is to ask the instructor questions, and to pass the information on to the other four. After a quarter of an hour the first patrol goes off to apply the knowledge gained from the models to the basin tap and plug, the drinking-water tap, the main tap, the ball-cock, the gas tap, and so on, even including the mystery of the washer. Then the children of this patrol come back to the classroom "to verify their observations and to talk them over." The next patrol investigates locks, fastenings, and hinges; another the drainage; and yet another natural and artificial lighting, including the physical properties of coloured glass and ribbed glass, and the meaning of gas-burners and electric switches. The instructor is told to imbue the patrol leaders with the idea that they must encourage the dull to understand and hunt for the appliances, because the quick need less help. Here, indeed, is the whole theory of education in a nutshell. Some of us may well lament that we did not form at an early age a part of a patrol, so that we might understand the mysteries of waste preventers and fuses and by-passes, and, more especially, the method of reading the meter, which might have saved us much money. The method is that of Mr. Squeers improved and extended. You learn how to spell "clean the window," and then by cleaning the window, learn the difference between words and deeds. Seriously, the plan is good, but this particular scheme is mainly applicable to town children. The method has been applied in a timorous way in country schools, and in them is capable of great extension.

GRADUATE STUDY IN LONDON.

THE emergency post-graduate course, which has been arranged in London by the Fellowship of Medicine for the benefit of medical officers of the navy, the R.A.M.C., the Royal Air Force, and from the Dominions, the United States, and allied countries, is gradually taking shape. The majority of the teaching schools in the metropolis, including St. Bartholomew's, Guy's, St. George's, London, Middlesex, St. Thomas's, and Westminster, have agreed to admit such post-graduate students to their ordinary teaching routine, including clinical instruction in the wards and out-patient departments, and lectures, demonstrations, and laboratory work. In some cases special courses, which are only for these officers, have been arranged. At the National Hospital for the Paralysed and Epileptic such a course began on February 10th, and at the West London Post-Graduate College, Hammersmith, a special reconstruction course in general medicine and surgery and in special subjects, to last eight weeks, will begin on February 17th. A special two months' course was started at King's College Hospital at the beginning of February, and two short courses are to be taken in March and in May at the Royal Free Hospital (Medical School for Women). If sufficient entrants are forthcoming, special lectures will also be arranged at the National Hospital for Diseases of the Heart, and special classes at the Prince of Wales's General Hospital (North-East London Post-Graduate College). The officer who undertakes the course offered by the Fellowship is in no way restricted as to facilities; he can interweave the courses, either routine or special, at different schools if he wishes. The Fellowship is the child and also the guest of the Royal Society of Medicine, at whose house, 1, Wimpole Street, it has its office. The course is for three months, but one or two months can be taken, and the fee is at the rate of £3 10s. for each month. Various deans are ready on application to put the officers in the way of studying the subject that may be most helpful to them.

SIR ARBUTHNOT LANE, the senior surgeon, and Sir W. Hale White, the senior physician, have just retired from the active staff of Guy's Hospital, and have been appointed to the consulting staff. The age rule, under which both would have already retired, has been in abeyance during the war, owing to the acceptance by the hospital authorities in each case of an offer of extended services on the active staff.

Medical Notes in Parliament.

THE serious business of the new Parliament opened on Tuesday with the King's speech, which was of unusual length. The first paragraphs affirmed that the terms of the armistice have been perseveringly enforced, and that by the occupation of the bridge-heads across the Rhine the road into Germany was laid open should she attempt to renew the war. In order to reap the full fruits of victory, and to safeguard the peace of the world, it would be necessary to maintain an adequate army in the field, and proposals necessary to secure the forces required are to be submitted. After a reference to the Peace Conference, and to the visit of the President of the United States to this country, the King paid a tribute to the inspiring sacrifice and invaluable service rendered by the peoples of the Dominions and of India during the war.

After an ominous intimation to the Commons that they would be asked to make further provision for meeting the permanent charges resulting from the war, and the new expenditure required for purposes of reconstruction, the speech went on:

The aspirations for a better social order which have been quickened in the hearts of my people by the experience of the

war must be encouraged by prompt and comprehensive action. Before the war poverty, unemployment, inadequate housing, and many remediable ills existed in our land, and these ills were aggravated by disunion. But since the outbreak of war every party and every class have worked and fought together for a great ideal. In the pursuit of this common aim they have shown a spirit of unity and self-sacrifice which has exalted the nation, and has enabled it to play its full part in the winning of victory. The ravages of war and the wastage of war have not yet, however, been repaired. If we are to repair these losses and to build a better Britain we must continue to manifest the same spirit. We must stop at no sacrifice of interest or prejudice to stamp out unmerited poverty, to diminish unemployment and mitigate its sufferings, to provide decent homes, to improve the nation's health, and to raise the standard of well-being throughout the community. We shall not achieve this end by undue tenderness towards acknowledged abuses, and it must necessarily be retarded by violence, or even by disturbance. We shall succeed only by patient and untiring resolution in carrying through the legislation and the administrative action which are required. It is that resolute action which I now ask you to support.

You will be asked to approve a bill for the creation of a new Ministry to deal with public health, with a view to the establishment throughout the land of a scientific and enlightened health organization to combat disease and to conserve the vigour of the race; also a bill to establish a Ministry of Ways and Communications, with a view to increasing and developing the industrial and agricultural resources of the country by improved means of transport.

You will be asked to consider measures for effecting a speedy increase on a large scale in the housing accommodation of the country, for the fulfilment of the pledges given to trade unions, for the prevention of unfair competition by the sale of imported goods below their selling price in their country of origin, and for increasing industrial and agricultural output, without which a considerable and permanent betterment in the national condition cannot be effected. Proposals will also be laid before you for encouraging settlement on the land, particularly by those who have been in the fighting forces of the Crown, for providing suitable men with the necessary agricultural training and for enabling them to stock and equip their holdings, and for the reclamation of land and the promotion of a comprehensive scheme of afforestation.

Finally, I commend to your earnest consideration the industrial problems of the time. That the gifts of leisure and prosperity may be more generally shared throughout the community is my ardent desire. It is your duty, while firmly maintaining security for property and person, to spare no effort in healing the causes of the existing unrest, and I earnestly appeal to you to do all that in you lies to revive and foster a happier and more harmonious spirit in our national industrial life.

At the beginning of business the President of the Local Government Board, Dr. Addison, introduced a bill to establish a Ministry of Health and Board of Health in England and Wales and in Scotland respectively to exercise powers in respect of health and local government.

THE WAR.

CASUALTIES IN THE MEDICAL SERVICES.

ROYAL NAVY.

Died on Service.

SURGEON COMMANDER J. A. KEOGH, R.N.

Surgeon Commander John Ambrose Keogh, R.N., died at the Royal Naval Hospital, Chatham, on February 5th, aged 55. He was educated at Queen's College, Cork, and graduated as B.A. of the Royal University, Ireland, in 1885, and as M.B., M.Ch., and M.A.O. in 1886, after which he entered the navy as surgeon. He attained the rank of fleet surgeon on February 21st, 1906. At the beginning of the war he was stationed at the Bermuda Naval Hospital.

SURGEON LIEUTENANT W. P. COWPER, R.N.

Surgeon Lieutenant William Pearson Cowper, R.N. (temporary), died on February 1st of illness contracted during the battle of Jutland, nearly three years ago. He was the son of Mr. W. Cowper of Hendon, and was educated at Edinburgh, taking the Scottish triple qualification in 1903. After filling the posts of house-surgeon and house-physician at Hampstead General Hospital, of house-surgeon and anaesthetist at the Royal Westminster Ophthalmic Hospital, and of house-physician of the West End Hospital for Nervous Diseases, he went into practice in London. He took a temporary commission as surgeon in the navy soon after the war began

ARMY.

Died on Service.

CAPTAIN R. AITKEN, R.A.M.C.(S.R.).

Captain Robert Aitken, R.A.M.C.(S.R.), was reported as having died on service in the casualty list published on February 5th. After graduating M.B. and Ch.B. in the University of Glasgow, he took a commission as lieutenant in the Special Reserve of the R.A.M.C. on August 9th, 1917, and was promoted captain a year later.

CAPTAIN A. G. S. LOGIE, R.A.M.C.(T.F.).

Captain Alexander Graham Spiers Logie, R.A.M.C.(T.F.), died of pneumonia at the 1st Northern General Hospital, Newcastle-on-Tyne, on February 1st, aged 53. He was educated at Edinburgh University, where he graduated M.B. and C.M. in 1887, and before the war was in practice at Raglan, Newport, Monmouth, where he was medical officer and public vaccinator of the Raglan District of Monmouth Union. He took a commission as captain in the R.A.M.C.(T.F.), in the South-Eastern Mounted Brigade Field Ambulance on October 19th, 1915, and was transferred to the Highland Mounted Brigade Field Ambulance on December 3rd, 1915. He was the fourth son of the late Rev. Dr. Logie, minister of Dirleton, East Lothian.

Repatriated.

Captain N. K. Bal, I.M.S.
Captain R. M. Coalbank, R.A.M.C. (temporary).
Captain F. Dallimore, M.C., R.A.M.C. (temporary).
Captain N. A. A. Hughes, R.A.M.C. (temporary).
Captain L. Murphy, R.A.M.C.
Captain P. E. O'Donoghue, I.M.D.
Captain J. Startin, R.A.M.C.
Lieutenant G. V. W. Anderson, R.A.M.C.(S.R.).
Assistant Surgeon F. Aquino, I.M.D.
Assistant Surgeon E. Duckworth, I.M.D.
Assistant Surgeon H. N. Stewart, I.M.D.
Assistant Surgeon H. A. T. Wells, I.M.D.

HONOURS.

THE following is a continuation of the list published in our last issue of awards to medical officers in recognition of their "conspicuous gallantry and devotion to duty" in the field:

Military Cross.

Captain Hugh Wansey Bayly, R.A.M.C.(T.F.), attached 293rd (London) Brigade, R.F.A.

On September 16th, 1918, at Saudemont, when the village was heavily bombarded in spite of the fact that he himself was ill, he remained at his post dressing and attending to the wounded, and throughout a trying period he displayed admirable composure and disregard of danger.

Temporary Captain (acting Major) James Biggam, R.A.M.C., D.A.D.M.S., 3rd Cavalry Division.

On the night of October 3rd-4th, 1918, he carried important messages to advanced collecting posts at Joncourt, the road being under heavy machine-gun fire and bombing from aircraft. On the night of October 9th-10th, he carried out an exhaustive reconnaissance of roads and villages under heavy shell fire. His untiring energy was worthy of great praise.

Lieutenant George Edmondson Birkett, R.A.M.C.(S.R.), attached 1st Battalion, Gloucester Regiment.

Throughout September 15th and 16th, 1918, during operations south of Maissemy, he worked under heavy shell and machine-gun fire, and brought in several wounded men. The enemy shot down many stretcher-bearers and stretcher parties on the 16th, but this officer worked indefatigably and continued to search for and bring in wounded until he was wounded in the spine by a sniper on the 16th. By his personal courage and energy he undoubtedly saved many valuable lives.

Temporary Captain Daniel Michael Boohan, R.A.M.C. (Salonica).

During the attack on the "P" Ridge on September 18th, 1918, having established an aid post and dressed a very large number of casualties, he moved forward with stretcher-bearers in front of the line and brought in wounded from the most exposed positions under trench-mortar and machine-gun fire. He worked continuously from dawn to dark, regardless of personal danger.

Captain (now Major) John Alfred Briggs, 10th Field Ambulance, C.A.M.C.

During the fighting east of Arras, August 26th-28th, 1918, this officer worked continuously. On many occasions he led his stretcher-bearers forward close up to the front line under heavy shell and machine-gun fire, to dress and evacuate wounded. Although blown up and bruised by a shell he refused to leave, and remained on duty. He set a fine example of gallantry and devotion to duty.

Captain (acting Major) Hector Mackay Calder, D.S.O., R.A.M.C.(T.F.), D.A.D.M.S., 47th Division.

For conspicuous courage during operations between August 22nd and September 8th, 1918, in the region of Happy Valley, north of Bray, and at Moislains. He did most valuable work evacuating wounded under most strenuous conditions, and during the many periods of heavy shelling his untiring zeal was a powerful stimulus to all ranks.

Temporary Captain Graham Wilson Christie, R.A.M.C., attached 12th Battalion, East Surrey Regiment.

During operations on October 1st and 2nd, 1918, near Gheluwe, he dressed the casualties of the advanced guard, under heavy shelling and machine-gun fire. During thirty-six hours he evacuated over 200 wounded from different units, working continuously without rest. His skill and quickness undoubtedly saved lives.

Captain Lewis Piers Churchill, No. 8 Field Ambulance, C.A.M.C.

During the fighting east of Arras, August 26th to 28th, 1918, he was continuously on duty under heavy shell fire, and had absolutely no relief during the whole period. He kept in touch with all his regimental aid posts, and was responsible for the rapid evacuation of his wounded from the forward line. His zeal and devotion to duty were admirable.

Temporary Captain Ailwyn Herbert Clarke, R.A.M.C., attached 7th Dragoon Guards.

On October 10th, 1918, when about two miles north-west of Le Cateau, he several times proceeded under heavy shelling to the sunken road south-east of Rambourlieux Farm to attend to wounded. He succeeded in dressing all the wounded under heavy fire, and got them carried away to safety.

Captain Herbert Augustus Cochrane, C.A.M.C., attached 13th Battalion Canadian Infantry, Quebec Regiment.

On September 2nd, 1918, when the battalion attacked the Drocourt-Queant line, although wounded two days previously, he remained at duty, and established a dressing station well forward before zero hour. Shortly after the start of the attack he dressed several cases under heavy barrage and continued forward, dressing many wounded in the open under machine-gun fire. He worked all day, continually exposing himself, and his gallant conduct undoubtedly saved a great deal of suffering.

Captain Frederick Brecken Day, C.A.M.C., attached 54th Canadian Infantry.

On September 2nd, 1918, near Arras, for marked gallantry and devotion to duty. During the course of the battle he made many trips under heavy machine-gun fire to dress wounded, and afterwards dressed wounded for hours in his aid post, not only those of his own battalion but also of at least five other battalions and many wounded of the enemy. It was without doubt due to his exertions that the wounded were cleared so quickly and many lives were saved thereby.

Temporary Lieutenant Christopher Dean, R.A.M.C., attached 1st Battalion, West Yorks Regiment.

At Holnon, during the operations of September 17th and 19th, 1918, although suffering from a sprained ankle, he was untiring in his efforts to collect and attend wounded. He was constantly exposed to shell fire, but took no notice for himself, though he made his stretcher-bearers take cover.

Temporary Captain Frederick Robert Dougan, 36th Field Ambulance, R.A.M.C.

On August 26th, 1918, near Mametz, when this officer was clearing an infantry brigade, the Sussex Regiment was held up in a valley, the only exit from which was in full view of the enemy. Throughout the day this officer repeatedly brought up squads of bearers and superintended the removal of the wounded under continued heavy fire. Had it not been for his personal courage the wounded of the battalion could not have been cleared for many hours. On another occasion he personally led a single squad under heavy fire in order to bring in a wounded non-commissioned officer of his own bearer division.

Temporary Captain John Melville Elliot, M.B., R.A.M.C. (Salonica.)

Under heavy fire when in charge of stretcher-bearers on September 18th-19th, 1918, he took squads backwards and forwards from advanced dressing station to regimental aid post near Sugar Loaf through heavy barrages. He also assisted in dressing wounded for forty-eight hours unceasingly in a constantly-shelled camp. It was mainly due to his initiative and disregard of personal danger that touch was kept with regimental medical officers under very trying circumstances.

Temporary Captain Alexander Keith Forbes, R.A.M.C., attached 1st Battalion Coldstream Guards.

East of the Canal du Nord, on September 27th, 1918, soon after zero, he established the regimental aid post in the canal, having to cross a stretch of ground swept by machine-gun fire. From this well-chosen forward post he was able to dress all the wounded of his own and other units, undoubtedly saving many lives. He went out many times into the shell-swept area and brought in wounded.

Captain Norman McLeod Halkett, C.A.M.C., attached 38th Battalion Canadian Infantry, East Ontario Regiment.

During operations against the Drocourt-Queant line near Dury between September 1st and 3rd, 1918, near Vis-en-Artois, the area in which the regimental aid post was located was persistently searched by enemy artillery, causing many casualties. He attended to the wounded in the open in spite of heavy shelling. Later, the regimental aid post was established in an open trench, and he again carried on under severe shell fire with untiring energy and utter disregard for his own personal safety.

Captain John Claude Moseley Harper, 7th Field Ambulance, A.A.M.C., attached 28th Battalion, A.I.F.

During the operations on the Somme River and East of Mont St. Quentin on August 29th and September 2nd, 1918, he displayed the greatest gallantry and coolness in attending the wounded, although he was under heavy shell and machine-gun fire the whole time. His untiring energy and splendid example, and his personal supervision of the evacuation of the wounded yielded excellent results, in spite of most trying conditions.

Temporary Lieutenant Benjamin Hutcheson, R.A.M.C., attached 2nd Battalion, Seaforth Highlanders.

During the operations east of Arras on August 30th, 1918, he displayed conspicuous gallantry and devotion to duty, working in the open under heavy machine gun and artillery fire attending to the wounded with an unselfish disregard of danger that was a splendid example to all.

Captain Frederic Hobart James, A.A.M.C., attached 56th Battalion Australian Infantry.

During the attack on Peronne on September 1st-3rd, 1918, this officer was conspicuous for his gallantry and devotion to duty, working unceasingly under heavy fire and practically without sleep during the whole period, attending to a large number of wounded. His energy and untiring self-sacrifice were worthy of the highest praise.

Temporary Captain Henry Michael Joseph, R.A.M.C., attached 9th Battalion, Essex Regiment.

During operations August 8th-10th, 1918, near Morlancourt, this medical officer displayed great courage and energy in dealing with the wounded. On August 10th, 1918, he moved forward immediately behind the fighting troops and saved many lives by timely action. When the objective was gained, and battle patrols went out, the enemy's machine-gun fire was especially heavy; he nevertheless went forward and dealt with cases, carrying one badly wounded man to a place of safety on his back under fire.

(To be continued.)

England and Wales.

PROFESSOR BOSTOCK HILL.

DR. A. BOSTOCK HILL has retired from the posts of medical officer of health and public analyst for the county of Warwick, after forty-two years' service in the latter appointment. The Warwickshire County Council, in accepting with regret his resignation, has placed on record its appreciation of the extremely able manner in which he has discharged all his duties, and has appointed him consulting county medical officer of health. Alderman Evans, in the course of a tribute to Dr. Hill's work as county analyst, said that not one of the vast number of analyses he had made had ever been called in question. Dr. Bostock Hill, who is professor of hygiene in the University of Birmingham, and a valued member of the Ministry of Health Committee of the British Medical Association, founded the "Warwickshire system" of public health organization. Sixteen years ago he instituted the appointment of lady health visitors, and obtained official recognition of these appointments throughout the county. His father, Dr. Alfred Hill, who is now in his 93rd year, was for many years M.O.H. for Birmingham, and his brother, Dr. Eustace Hill, is M.O.H. for the county of Durham, and professor of hygiene in the University of Durham.

THE MIDWIVES ACT IN LONDON.

The Midwives Act Committee of the London County Council has reported that the average yearly number of cases in which midwives in London had called in doctors to their assistance was approximately 4,000; at an average rate of payment in each case of 30s. the cost to the Council would be £6,000 a year. It was pointed out that the power given to recover the fee from the patient or the person maintaining her, save when there is inability to pay owing to poverty, raised novel considerations, because the liability for payment is incurred not by the patient, but by the midwife in the course of a duty imposed upon her by law. It is not thought that the total amount recoverable under this head will be more than 25 per cent. of the expenditure incurred by the Council. The estimated cost of carrying out the powers and duties of the Council under the Act is £6,500 for the year 1919–20.

Ireland.

ROYAL VICTORIA HOSPITAL, BELFAST.

AT the meeting of the board of management of the hospital on February 5th, Major T. Houston, O.B.E., M.D., intimated that the St. John Ambulance Brigade intended to present to the hospital a large amount of equipment for the pathological laboratory and of general hospital necessaries for the hospital. These were from the hospital in France where Major Houston had been working. Some of the equipment is now practically unobtainable, and all is of great value at ruling prices. The heartiest thanks of the board were given to the brigade for its timely and valuable gift. Major Houston has charge of the new laboratories in the King Edward VII Memorial block of the hospital, and will know how to make the best use of the material.

Sir William Whitla, M.P., senior physician to the hospital, has tendered his resignation as physician, finding

that as M.P. for the Queen's University of Belfast he would have to stay much of his time in London. About the middle of the war Sir William had been requested by the board of management, on the recommendation of the medical staff, to continue his services during the war, but he felt that this duty did not now lie upon him, and he desired to devote all his time and energies to his parliamentary duties. The resignation was accepted and his name was placed on the list of consulting physicians.

SALARIES OF POOR LAW MEDICAL OFFICERS.

Drs. McGowan, Thompson, Donnelly, Hegarty, and McIvor have intimated to the Magherafelt Poor Law guardians that they had forwarded the decision of the board at a recent meeting to the Central Committee, which was unable to accept it as a fair or reasonable settlement of their claim, and had instructed them to cease work. This course the medical officers were reluctant to adopt, more especially as at present there was so much illness throughout the union; they had therefore decided to make a final appeal to the guardians to grant them a graded scale as had been done in other unions. The medical officers stated that should the board decline that appeal it was obvious they could not any longer, under existing circumstances, be responsible for the proper discharge of the work, at a rate which would not only give them no remuneration for their labour, but was inadequate to pay their travelling expenses. They would, however, do the best they could for the sick poor in their several districts, and after February 10th, 1919, would attend their dispensaries on the first dispensary day in each week, and renew visiting tickets for attendance at the patients' homes on Tuesday, Wednesday, and Thursday in each week. The communication was marked "read."

Dr. Stephenson, Local Government Board's medical inspector, attended the last meeting of the Limavady board of guardians for the purpose of urging them to come to some settlement with the dispensary medical officers regarding their future salaries. In August last the salaries of the doctors were increased from £110 to £135 a year, but this increase they declined to accept as sufficient. Later, a resolution was adopted to the effect that each dispensary medical officer in the union be given an initial salary of £135 a year from January 1st, with increments of £10 a year after each five years of approved service until a maximum of £175 is reached. The medical officers declined to accept this offer also, and Dr. Lane stated that by direction of the Central Committee they had asked the guardians to fix an initial salary of £200 a year, increasing to a maximum of £300 by increments of £20 a year each fifth year, the scale to be retrospective in regard to existing officers. The amount paid yearly to all the medical officers was £500. Of this £25 15s. came out of the local rate and the remainder from imperial funds. The valuation of the union was £70,000, so that the amount of their salaries chargeable to the local rate was less than one-eleventh of a penny in the £. Dr. Stephenson having asked the guardians to reconsider the matter and meet the doctors, it was decided that the guardians should first reconsider the question themselves and then invite the doctors or their representatives to meet them in order to come to some decision if possible.

Correspondence.

ENDURANCE IN AORTIC INSUFFICIENCY.

SIR,—A patient of mine has suffered with well marked aortic insufficiency for fifteen years to my knowledge, and probably for much longer. Nine years ago, when 70 years of age, he cycled from Bournemouth to Wincanton, a distance of about forty miles, arriving in time for breakfast, spent the day seeing his friends, and cycled back in the evening. He is now in his eightieth year, but last summer he cycled down to Weymouth (thirty miles) against a strong head wind. While staying at Weymouth he spent his time bicycling in that hilly district and bathed in the sea, on one occasion diving to the bottom at a depth of over 20 feet. A few years ago he wanted some good-sized trees in his garden cut down. He hired a man for the job, but did most of the work himself, climbing the trees for the purpose. He cuts his lawn, clips his hedges, and is fond of rolling a fairly steep path with a rather heavy roller. I have often pointed out to him the unorthodoxy of his proceedings, but he likes to have his own way, and has certainly been happier than if he had been condemned to an invalid life. He is a big, powerfully built man of about 14 stone, and I cannot say that I have ever found any marked ill effects resulting from his activities.—I am, etc.,

Bournemouth, Feb. 4th. CHARLES D. MUSPRATT.

URETERS AND THEIR ORIFICES IN GUNSHOT WOUNDS OF THE SPINE.

SIR,—I have read with interest an article by Colonel Andrew Fullerton, A.M.S., in your issue of February 1st, on the state of the ureters and their orifices in cases of gunshot wounds of the spine, and would be grateful for space in which to make one or two comments.

In the first place I must protest against Colonel Fullerton ascribing to Dr. Fearnsides the description of the sequence of events that takes place in the bladder after gunshot wounds of the spine. This sequence I described fully in a lecture before the Hunterian Society and published (*Lancet*, February 3rd, 1917) more than a year before the review of literature by Dr. Fearnsides appeared in *Brain*. A reprint of this lecture was forwarded to Colonel Fullerton on publication, and even a superficial glance at Dr. Fearnsides's article would show that he is reviewing the literature and incidentally my lecture. In this sequence of events there is retention of urine followed after a varying period by periodic reflex micturition.

Colonel Fullerton sets out to prove that the valve action of the lower end of the ureter is normal in the paraplegic bladder, and he does this to his satisfaction by inspection of the ureteric orifice and of the efflux coloured with indigo-carmine.

The cases in proof are six in number, all of them cystoscoped within the first few days of the spinal injury. One would hardly expect at this early stage to see very striking cystoscopic changes at the ureteric orifice, although at a later time the majority of the fatal cases show dilatation of the ureters and of the renal pelvis.

But even in Colonel Fullerton's report of his cases the ureteric orifices are not normal. Four out of the six cases (66 per cent.) show changes at the ureteric orifice. Case IV "ureteric orifices perhaps slightly patulous"; Case V "ureteric orifices appeared patulous," and so on. This does not seem a very good proof of the competence of the uretero-vesical orifice. The observations on the efflux coloured with indigo-carmine are not more convincing. In Cases II, IV, and V (50 per cent.) the efflux was definitely abnormal, and in Case I the chromocystoscopy failed from delay of the excretion of the dye.

The important practical point in all these paraplegic cases is not, however, whether the ureteric orifice is normal or patulous, but how the ascending pyelonephritis, which is eventually fatal in practically all these cases, can be avoided. In February, 1917, I recommended, in order to prevent the combination of catheter infection with recurrent bladder distension, that the catheter should be entirely discarded in these cases and that cystotomy should be done at the earliest possible time.

In my view, and it has been strengthened since by isolated cases so treated, this would prevent the fatal ascending pyelonephritis. This was, however, without effect on Colonel Fullerton and his colleagues in France, and the stream of paraplegics, dying from catheter infection, continued unabated. Lately Major Besley of the American army, basing his recommendation on the sequence of functional changes described in my original lecture, recommended that there should be no local interference at all, and that passive overflow be allowed to continue until the period of active incontinence was established. To this has been added massage of the bladder and of the prostate. This treatment in the hands of American surgeons has apparently been followed by good results—namely, the absence of urinary infection.

I have as yet seen only a few of the later results of this method, which I understand had begun to be practised in the British army, for up to the time the armistice was declared cases were still coming under my care at the King George Hospital, treated by catheter. I trust that the later cases sent home may prove that this method

is efficacious, and that the patient may escape urinary infection, even though it may be at the expense of some renal dilatation.—I am, etc.,

London, W., Feb. 12th. J. W. THOMSON WALKER.

THE FUTURE OF THE MEDICAL PROFESSION.

SIR,—I am disappointed in not finding any support in the JOURNAL to the article in the SUPPLEMENT of January 18th, 1919. p. 6, on "The future of the medical profession" in relation to State medical service.

Dr. Cooper, as we veterans know, was a leader of the brigade of "Old Contemptibles" who fought for payment for work done. Although he only puts forward two advantages for this system, these, I think, cannot be disputed, and then mentions the only valid objection—that some medical men might make unnecessary visits—but against this it can be asserted that now many insured patients demand unnecessary visits, and this objection he meets by the suggestion of a small charge for the coupons.

I have had little personal experience of the working of the National Insurance Act, as I retired from general practice when it became imminent, and now am doing public health work. I saw it was not equitable and the old objection against contract work perpetuated; there being no provision for consideration on the part of the beneficiary. Therefore it could bring no satisfaction to the profession, as is now shown week by week in the medical press. The dissatisfaction cannot be due to the amount of remuneration, for it is twice the old club rate, with no medicine to supply without extra payment.

The conditions of service are demoralizing, as they encourage malingering, waste, and imposition in the insured classes; and it is to the interest of the panel doctor to be accessory. It is inadequate, inasmuch as the sick pay does little more than pay the house rent.

It is also inconsistent, for the treatment of travellers and temporary residents, consultations, drugs, and appliances are now paid for according to services and material supplied. In spite of the unusual exhibition of financial caution by the Chancellor of the Exchequer during the inception of the National Insurance Act, when he stated the amount required for the payment of services rendered would be so uncertain that it could not be estimated for budget purposes.

Yet I understand that the present scheme has continually exceeded the estimates; that, however, is a small matter, being rendered immune by the gigantic war expenditure.

But national insurance against sickness and invalidity was necessary and beneficent, as was making it compulsory and contributory; but the excellent contributory principle is unfortunately limited to small weekly payments, there being no incentive to the preservation of health, which is largely a matter of personal care and habits. Surely the National Insurance Act needs amendment, when so many departments of medicine are being specialized in the public services, such as tuberculosis, venereal and all other serious infectious diseases, the treatment of mental deficients, and the whole period of childhood and motherhood is being provided for by the Maternity and Child Welfare Act. The new Education Act contemplates providing medical supervision and treatment for all school children up to a self-supporting age.

Taking all these things together—and I am not chiefly concerned about the interests of the medical profession—an amendment of the Act is urgently needed, and the principle advocated is payment according to services rendered.—I am, etc.,

Poole, Jan. 28th. WILLIAM GOSSE.

MEDICAL RESETTLEMENT.

SIR,—Mr. Bishop Harman omitted one salient point when defending the Central Medical War Committee's scheme for demobilization. Men "on service" may be divided into three classes: (*a*) Those (mainly *à la suite* T.F.) who have never left their own homes, and who have carried on their practices or specialities in addition to their military work; (*b*) those who have been on home service, but away from their own homes; (*c*) those who have been on service abroad.

Class (*a*) have enjoyed the comforts of home life, have been able to assist in the training of their children (four and a half years' absence of the father from home is a very serious handicap to the child), have kept their own work going, and have earned more money, and probably made themselves more or less "secure" in the various schemes on foot (venereal clinics, for example).

Class (*b*) are less fortunate. They have probably been able to get leave to visit their homes during any sudden stress (financial crises or family illnesses), and probably in any case once every three to six months.

Class (*c*) are the unfortunates. They may have had all the risks of active service; they certainly have not been able to get leave oftener than once every four or five months (in many cases not at all in eighteen to twenty-four months), and they have probably been unable to get leave for any sudden domestic crisis (I was myself refused leave for the very serious illness of my wife—rightly, from the military point of view).

If the Committee considers it just to give the same number of points to each of these three classes (other things being equal), I do not—and I am only one of thousands who think alike.

I know, of course, that it is impossible to scheme to please every one, but I should have thought it a very simple matter to add a certain number of points for every six months' service abroad and to subtract, say, six points from those who have served at home in their own areas.

Why should it be necessary to subtract points from the whole-timer? Has he not suffered financially and lost a good deal of seniority and perhaps been out of touch with his speciality, or again handicapped by wounds or illness?

I am a whole-timer, and I have to keep my home on little more than one-third of the money I should have if I were back in civil employ. I put this forward to the Central Medical War Committee, and I have been awarded one point. Much as I regret to say it, I think the committee has given very little consideration to the active service member of the profession as compared with that given to the home service member.—I am, etc.,

February 5th. G.

MEDICAL DEMOBILIZATION.

SIR,—In each battalion an officer is detailed to give sympathetic, thorough, and intelligent information to each officer or man who asks questions on demobilization. As that means is not available for R.A.M.C. officers, may I ask Mr. N. Bishop Harman, who answers very clearly several criticisms in the BRITISH MEDICAL JOURNAL of February 2nd, if he can give any information on the following:

(i) There are dozens of us in middle life who sold our practices and thereafter took a commission. How should they fill up Question 10 in Form M.N.S. (M) 16 ["Have you a medical practice or medical post in civil life to return to?"], and will they get the *plus* marks credited to a man who has a single-handed general practice?

(ii) Will all the men who answer "No" to Question 3 ["Do you desire early demobilization?"] be kept back till those who answer "Yes" are demobilized?

(iii) Can he, or any one else, give us any idea of the number of R.A.M.C. officers required for the army of occupation? The combatants know how many officers and men are required, with age limit, and other conditions; and, as we would like an idea as to when we may expect to be released, it would be appreciated if some one in authority can say how many R.A.M.C. officers (in addition to the regular R.A.M.C. officer) are required for the 900,000 army of occupation, and what age limit, etc., there is to be, and, on the basis of that number, he might be able to indicate to us that all men above a certain age (unless they desired to remain on) could expect to be relieved by an approximate date. That would banish the uncertainty that exists with so many of us.—I am, etc.,

February 6th. G.P.

*** We understand that the answer to (i) is that such medical officers will get the three points allowed to men who have no practice to return to, but not the *plus* marks credited to those who have a single-handed practice. The answer to (ii) is "Yes." We doubt whether any answer can be given to (iii) until the military situation is clearer. The distribution and medical requirements of the army of occupation must depend on circumstances.

HOSPITAL EXPERIENCE FOR JUNIOR R.A.M.C. OFFICERS.

SIR,—It was with the greatest interest and satisfaction that I read your article in the BRITISH MEDICAL JOURNAL of February 1st, entitled "Hospital Residents." It is to be hoped that the suggestions contained therein will be brought to the notice of the responsible authorities. Such a system of seconding younger medical officers for work in civil hospitals at home would be of the very greatest assistance to those who, like myself, have served more than four years, and whose clinical experience during that period has been limited to a month or two in a base hospital.

By the arbitrary division of medical officers into those born before or after November, 1888, length of service has been largely discounted for the latter class, and age becomes the primary factor in determining priority of release. Unless therefore some scheme such as that already existing for Australian medical officers can also very soon be arranged for the younger British medical officers, it appears that they must be left in "professional stagnation" for many months to come. Since those under thirty years of age are not to be released, should not every effort be made to enable them during their fifth year of service to relearn that which they have been forgetting during the previous four years?—I am, etc.,

B.E.F., Feb. 7th. K. J. Y.

LESSONS FROM THE WAR IN HOSPITAL CONSTRUCTION.

SIR,—Like probably most other members of the profession I have read with great pleasure the notice of the clinical meeting of the Association to be held in April. One is thankful to think that at last we are beginning to return to our scientific work at home.

But in your note in the issue of February 8th I saw no notice of one subject that I hoped would have been included. We all know the remarkable work that has been done by the numerous military hospitals at home and abroad, and I feel sure that we should all be interested to learn something more of their building, their equipment, their staffing, and the organization of their scientific work. If it has not already been arranged, would it not be possible to have a lecture and demonstration, illustrated if need be by plans and models? It would be especially useful if the lecturer or demonstrator would have in view the turning to use in civil hospitals of the experience gained in those military hospitals, both as regards their structure and the organization of their scientific work. Not only must there be much to be learned by large and small civil hospitals, but there is a possibility of making use of material that cannot much longer be required.—I am, etc.,

Bradford-on-Avon, Feb. 8th. CHAS. E. S. FLEMMING.

THE TREATMENT OF WOUND SHOCK.

SIR,—In the leading article of the current issue on this subject mention is made of a lying claim to priority by the Germans on behalf of one Kestner, otherwise unknown, implying that the credit belongs to Bayliss, without mentioning that an Italian, Pugliese, made the suggestion (it may have been no more) to use gum arabic dissolved in Ringer's solution for haemorrhage, in 1912, and to that extent has a claim to priority over Bayliss. The original is inaccessible to me, but the German abstract states:

> The author recommends, in cases of considerable haemorrhage, in which the blood pressure is low, the pulse rapid and very weak, the intravenous injection of Ringer's solution to which very small quantities of gum arabic have been added.

The Italians already feel that they have several priority grievances against us; let us not add another.—I am, etc.,

Oxford, Feb. 8th. A. S. LEYTON.

AN International Committee for the restoration of the University of Louvain has been formed. National Committees have been set up in the twenty-four nations which have intimated their approval of the project.

THE Civil Governor of Madrid has issued an order making vaccination and revaccination compulsory owing to the present severe visitation of small-pox.

Obituary.

RICHARD A. REEVE, M.D., LL.D.,

Emeritus Professor of Ophthalmology in the University of Toronto, and Past-Presi ent of the British Medical Association.

THE announcement of the death of Dr. Richard An Reeve, who was President of the British Medical A s tion at the annual meeting at Toronto in 1906, has been received with deep regret. He was connected with medicine in Toronto throughout the whole of his working life; he held the degrees of B.A. and LL.D.Toronto and M.D.Queen's, and was a Fellow of the American College of Surgeons.

When, in 1872, he was appointed to the Toronto General Hospital he was the first specialist to join the staff. In ophthalmology, otology, rhinology, and laryngology, all of which subjects were at first embraced within his course, he showed himself a careful and conscientious practitioner, possessed of an unusual degree of dexterity and manipulative skill. He never allowed his outlook to be contracted, and his special work was always enhanced by his general proficiency in the whole science and art of medicine.

Dr. Reeve had been professor of ophthalmology in the Toronto School of Medicine, which was affiliated with the the university and virtually her teaching faculty, for some twenty years before the actual amalgamation took place; he then accepted the chair of ophthalmology and otology. He became dean of the faculty in 1896 and held that office when in 1903 the union with the medical faculty of Trinity College was effected. During his period of office also the new medical building and laboratories were erected.

We are indebted to Colonel R. D. Rudolf, C.B.E., C.A.M.C., for the following tribute to his life and character:

The news of the death of Dr. R. A. Reeve of Toronto will have been read everywhere with profound regret. Dr. Reeve seemed so youthful and almost boyish that it was always hard to realize that he had several years ago passed the normal span of life.

He was well known on both sides of the Atlantic, and was a familiar figure at all medical assemblies, where his happy fresh manner always helped to make these meetings a success. Dr. Reeve was a non-smoker and a total abstainer, and besides his constant attendance at purely professional meetings he would r gularly be present at all the social parts of such assemblies, often breathing an atmosphere of tobacco smoke, which he loathed, and yet happy and smi ing and full of quaint humour, thoroughly enjoying and largely contributing to the general good fellowship.

But while Dr. Reeve was so generally liked and respected, it is to the faculty and graduates in medicine of the University of Toronto that his death comes as a special blow. He was the dean of the faculty for nearly twenty years, and a more hard-working and conscientious dean probably never existed. He was punctilious in his attendance upon all the numerous committee and other meetings at which a dean is supposed to be present, and his happy manner and absolutely fair rulings always made his presence there invaluable. Every member of the faculty will recall many occasions when the atmosphere of the meeting would be surcharged with electricity over some acute question, such as the admission of women to the medical classes or the addition of an extra year to the curriculum, and our dean with his consummate tact would steer the discussion so that it ended amicably. And yet with all his suavity Dr. Reeve could well hold his own, and those at the meeting would usually find that they had reached the conclusion that the dean had meant them to reach. Dr. Reeve resigned the deanship several years ago, but he continued to attend the meetings regularly, and his unique experience was greatly valued.

The greatest visible monument that remains of our late dean is the magnificent Convocation Hall of the university. He was the prime mover in this project and spent endless time and energy in raising the necessary funds for it. But though his university always came first in his thoughts, Dr. Reeve was keenly interested in every question that affected the welfare of the Canadian medical man, and the much good work that he accomplished in raising the standing of his profession throughout the country will long live as a memorial of him.

Dr. Reeve was one of the most outstanding ophthalmologists on the American Continent, and, besides holding (until lately) the Chair in Ophthalmology in the University of Toronto, he was a member of all the special societies devoted to that subject. He wrote little, but generations of students will remember his dexterous operating, and bear the impress of his sound teaching. He had an enormous practice, but his hospital patients were as much to him as those who could well pay, and so great was his kindness of heart that often he would take nothing or only a nominal fee when he felt that a greater one could not be well afforded. I do not know at all, but doubt if he amassed much wealth, so great (sometimes almost too great) was his generosity in giving and his sensitiveness in asking for money. He was one of those men who work hard because they love their work and because they want to help their fellow men, and who almost resent the financial aspect of their services. One never heard a word spoken against "Dicky Reeve," as his old pupils loved to call him, and probably it would be right to say that in his death we have lost the most popular and beloved man in the Canadian medical profession.

Nearly two years ago Dr. Reeve suffered a terrible blow in the loss of his wife. They had no children, and were devoted to each other; all the time that he could spare from his work Dr. Reeve spent with her, and he was constantly planning and taking her upon trips in the hopes of improving her slowly failing health.

Dr. Reeve died suddenly, in the midst of his work. He will ere this have been laid to rest; but the memory of his keen, kindly face, and of his honest, upright character, will long remain fresh in the hearts of all those who knew him.

> His life was gentle; and the elements
> So mix'd in him, that Nature might stand up
> And say to all the world, "This was a man."
> *Julius Caesar*, Act v, Sc. v.

WILLIAM BARNETT WARRINGTON, M.D.LOND., F.R.C.P.,
Assistant Physician, Royal Infirmary, Liverpool.

IT is with great regret we have to record the untimely death of Dr. Warrington, which took place on February 2nd. He had been attacked by influenza on the previous Wednesday, pneumonia supervened, and in three days he passed away, the end coming rather suddenly.

William Barnett Warrington was born in Liverpool 49 years ago, the son of the late John T. Warrington, J.P. He was educated at Owens College, Manchester, and graduated M.B., Ch.B.Vict. in 1891. In 1893 he obtained the M.B.Lond. with honours in medicine and obstetrics, and graduated M.D. in the following year. He then studied at Leipzig University the subject of which he was destined to become so brilliant an exponent, and acquired a thorough knowledge of German. In 1905 Dr. Warrington became member of the Royal College of Physicians, and ten years later was elected a Fellow. When in 1896 he began practice as a physician he was already recognized as an authority on nervous diseases. In the physiological laboratory under Professor Sherrington Dr. Warrington conducted researches on the minute anatomy of nerve cells, which he published in the *Journal of Physiology*. He successively held the posts of assistant-physician to Stanley Hospital, to the Hospital for Consumption and Diseases of the Chest, and physician to the David Lewis Northern Hospital. The last post he relinquished in order to become assistant-physician to the Royal Infirmary. The Medical Faculty of the University had recognized his outstanding merit in appointing him lecturer on neuro pathology. He was a member of the Liverpool Medical Institution, and in 1913 was a vice-president.

At the outbreak of war Dr. Warrington, as a captain R.A.M.C.(T.F.), soon found scope for indefatigable work on the various nerve lesions and their results among the wounded. It was in these clinical observations Dr. Warrington was most deeply interested, and it is to be hoped his observations will be published in due course as a memorial of his assiduity and critical powers. His outstanding merit as a physician was recognized by his being chosen as one of the examiners in medicine at the University of London.

As a physician Dr. Warrington was in the front rank in all that related to nervous disease. He possessed in an eminent degree the contemplative trend of mind. The more intricate the problem the more attractive it was to him. He pondered deeply over his cases, and by his sound knowledge and clinical acumen often shed light on what was previously obscure and uncertain. By nature modest and impressed by the enormous gaps in neurological knowledge, Dr. Warrington was ever insistent on this point in the numerous papers he has published, and whenever he spoke at the Medical Institution. He took wide views, and it could never be said that in his study of disease his outlook was cramped. He recognized to the full that we live and move and have our being by our nerves.

The funeral, which was military, took place at the Lady Chapel. Besides his numerous professional brethren, representatives of the University, Royal Infirmary, and other bodies with which he had been connected were present to honour the memory of one whose loss is so keenly felt by all classes of the community. Dr. Warrington leaves a widow, a daughter, and two sons still at school.

The Services.

RETENTION OF RANK BY OFFICERS ON THE TERMINATION OF THEIR COMMISSIONS.

MEDICAL practitioners who have held temporary commissions in the R.A.M.C. will observe that under Army Order 376 of 1918 an officer whose service has been satisfactory throughout shall, on the termination of his commission or on relegation to unemployment, be granted "permission to retain the rank" he has held. This retention of rank will take the place of the honorary rank hitherto granted, and will take effect retrospectively to the beginning of the present war. An officer will be given permission to retain rank equivalent to the substantive rank held at the time of the termination of his commission. In this connexion temporary rank in the New Army is the equivalent of substantive rank.

It is understood that in general an officer will be given permission to retain or be granted rank equivalent to the highest acting or temporary rank he may have held, provided he has held that rank for an aggregate minimum period of six months.

Medico-Legal.

A MEDICAL MAN'S FEE.

AT the Swindon County Court, on January 15th, before Judge Gwynne James, Dr. H. B. Dismorr, of Wroughton, Wilts, brought an action against E. Bunce to recover the sum of four guineas in respect of professional attendance on defendant's wife. The sum of two guineas had been tendered in settlement of the account. Mr. Crewe Wood, who appeared for the plaintiff, said that Dr. Dismorr was not engaged to attend the defendant's wife at the birth of a child, but it was found later that operation was necessary, and he was hurriedly sent for. He found the woman in a critical state, performed the operation, and attended her on five or six subsequent occasions, until she completely recovered. The case was, we are informed, one of adherent placenta, with severe *post-partum* haemorrhage. After evidence had been given by Dr. Dismorr, Mr. Pridham, who appeared for the defendant, asked him what he would have charged had he been booked beforehand. His Honour said this was beside the point; the only question was whether in the special circumstances the fee charged was reasonable. Dr. T. C. Wilson of Swindon, giving evidence, supported the view that plaintiff's fee was very reasonable, and agreed that such cases as the one in question were very rare. For the defence, Dr. Whitley, M.O.H. for Swindon, expressed the opinion that the charge was not reasonable; if the midwife had had difficulty in securing medical attention she could have performed the operation herself. After interrogating this witness as to the operation performed and the seriousness of the case, His Honour, in giving judgement, said he had only to determine whether or not plaintiff charged a reasonable fee. The usual practice was for a doctor to be engaged, and the fee in such circumstances would be less than if there was a special call, because the doctor might have little or nothing to do; but in this case there was no retainer, and the plaintiff was specially called in to a lady who was seriously ill, and undoubtedly he saved her life. He attended altogether on six different occasions, and he charged four guineas. He (the judge) must assume that plaintiff was speaking the truth, and that it was a critical case. That being so, there must be judgement for plaintiff for the amount claimed.

We consider that Dr. Dismorr is to be congratulated on having his professional status and fees upheld in the county court. We understand that the defendant's attitude towards the case was supported by the County Nursing Association on the ground that two guineas was a sufficient fee for any emergency midwifery case, that being the fee payable by local authorities for an operation case under the Midwives Act, 1918.

The judge, however, taking as we think a proper view of the situation as a whole, decided that Dr. Dismorr, not having been engaged beforehand, had a right to charge a higher fee. The medical officer of health, in replying to questions put by the judge, seemed to regard the fee as unreasonable on the ground that no anaesthetic was used and that the medical man was not in the house for more than half an hour. Upon this the judge asked the pertinent question: "Does it not depend a great deal on the seriousness of the operation?"

Universities and Colleges.

LONDON INTERCOLLEGIATE SCHOLARSHIPS BOARD.

SEVENTEEN medical entrance scholarships and exhibitions of an aggregate value of about £1,550, tenable in the Faculty of Medical Sciences of University College and King's College, and in the medical schools of Westminster Hospital, King's College Hospital, University College Hospital, the London (Royal Free Hospital) School of Medicine for Women, and the London Hospital, will be offered for competition on July 15th, 1919. Particulars and entry forms may be obtained from the Secretary of the London Intercollegiate Scholarships Board, Mr. S. C. Rauner, M.A., Medical School, King's College Hospital, Denmark Hill, London, S.E.5.

Medical News.

IT is announced that Colonel Sir Ronald Ross has been appointed consultant in malaria cases to the Ministry of Pensions. He will advise on these cases in addition to his duties as consultant in malaria to the War Office.

THE subject for the Astley Cooper Prize 1916–19 at Guy's Hospital was gunshot wounds of the lungs and pleura. The prize has not been awarded. The essays will remain in the museum of Guy's Hospital unless the authors claim them by letter addressed to Mr. C. H. Fagge, F.R.C.S., honorary secretary of the Astley Cooper Prize Trustees.

AT the next quarterly meeting of the Medico-Psychological Association, to be held at 11, Chandos Street, London, W., on Thursday, February 20th, at 2.45 p.m., Lieut.-Colonel E. P. Cathcart, R.A.M.C., professor of physiology in the London Hospital Medical School, will read a paper on psychic secretion.

VISCOUNTESS RHONDDA has organized a women's watching council to consider measures for strengthening the position of women in regard to the forthcoming Ministry of Health. The members of the council include Lady Barrett, M.D., Mrs. Chalmers Watson, M.D., Dr. Helen Campbell, Dr. Adeline Roberts, and Miss Bunting.

THE Local Government Board has made an order rendering certain additional diseases compulsorily notifiable in England and Wales. A medical practitioner is required to notify each case of pneumonia occurring in his practice when the disease is primary or the result of influenza. A medical practitioner must also notify cases of malaria, dysentery, and trench fever unless he knows that they have been notified in the same district within six months.

AT the annual meeting of the American Medical Association, held in June, 1918, a petition was presented to the board of trustees asking that the association should publish a journal to be devoted to nervous and mental diseases on the lines of the *Archives of Internal Medicine* and the *American Journal of Diseases of Children*. At its meeting held in October the board authorized the publication.

THE Royal Society of Medicine has opened its house and library in Wimpole Street on Wednesday evenings after 8.30 to the medical officers of the British army medical services, home and Dominion, and also to those of the American and the Allied forces, for the purpose of meeting the Fellows, primarily for social intercourse. As a stimulus to discussion a very brief and informal talk has been arranged for each evening. On February 19th Dr. Norman Moore, President of the Royal College of Physicians, is to speak on English morbid anatomists, and on the following Wednesday (February 26th) Sir William Osler will give a bio-bibliographical discourse on Sir Thomas Browne and his *Religio Medici*. Addresses have been arranged for March 12th on disease and diagnosis by Dr. Henry Head, F.R.S., and on March 19th on Larrey and war surgery by Mr. W. G. Spencer.

Letters, Notes, and Answers.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

The postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

The address of the Central Medical War Committee for England and Wales is 429, Strand, London, W.C.2; that of the Reference Committee of the Royal Colleges in London is the Examination Hall, 8, Queen Square, Bloomsbury, W.C.1; and that of the Scottish Medical Service Emergency Committee is Royal College of Physicians, Edinburgh.

LETTERS, NOTES, ETC.

THE GRAVITY OF GONORRHOEA.

DR. G. D. K. WALDRON (Temporary Captain R.A.M.C.) writes: In the discussions both in the lay press and in the medical journals on the control of venereal disease predominance has almost always been given to syphilis, whilst gonorrhoea, with its distressing complications and sequelae both in man and woman, has been relegated to a secondary position. Although syphilis has been looked upon as a much graver malady than gonorrhoea, most authorities on venereal disease admit that gonorrhoea unless treated by the expert is as difficult or even more difficult of cure than syphilis. Moreover, whereas persons suffering from syphilis can be rendered non-infectious quite quickly, the same cannot be said of those suffering from gonorrhoea. Any practitioner can quickly pick up the modern treatment of syphilis by several visits to the nearest venereal treatment centre, but it is impossible for him to learn to treat gonorrhoea effectually in the same time and manner mainly for the following reasons: (1) There is little or no teaching at medical schools; (2) most works on venereal disease, whilst dealing exhaustively with syphilis, do not so deal with gonorrhoea; (3) the obsolete methods laid down in many quite up-to-date textbooks of surgery must be discarded as incomplete and useless; (4) an intimate knowledge of the histology, anatomy, and clinical pathology of the urethra and its adnexa is essential; (5) long practical experience is necessary for the intelligent performance of the needful manipulations, and much skill and knowledge are essential for the exact and intelligent use of the operating urethroscope, an instrument of the first importance in the treatment of gonorrhoea.

My plea is this: That it be further impressed on the general public that gonorrhoea as well as syphilis is a very grave malady, and extremely difficult to really cure. That governing bodies in appointing medical officers to take charge of venereal clinics should be reasonably sure that the officers in charge of gonorrhoea sections have the knowledge and experience necessary for the undertaking of the treatment of gonorrhoea intelligently and well. And, finally, that venereal clinics shall be supplied with the drugs and instruments essential for the proper treatment of gonorrhoea.

THE JAPANESE FLY-TRAP.

DR. E. K. WILLIAMS (Billesdon, Leicester) writes with reference to the Japanese fly-trap (BRITISH MEDICAL JOURNAL, January 5th, 1918, and February 8th, 1919): I brought several home with me from India in 1916. They can be bought from Japan Imports, Ltd., Bank Street, Bombay, India. They cost 8 Rs. apiece.

CAPTAIN R. GRANVILLE WADDY, R.A.M.C.(S.R.), writes on the same subject: While in Egypt I made a note of the maker, and give the details as quoted upon the trap: "Automatic Fly-trap, manufactured by Owari Tokei, Kabushiki-Kaisha, Nagoya, Japan. Sole agent: Takata and Co., Tokio, Shanghai, and Osaka." Where the fly pest is, there should be the automatic trap.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
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Each additional line	0	0	9
Whole single column	4	0	0
Whole page	12	0	0

An average line contains six words.

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Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.